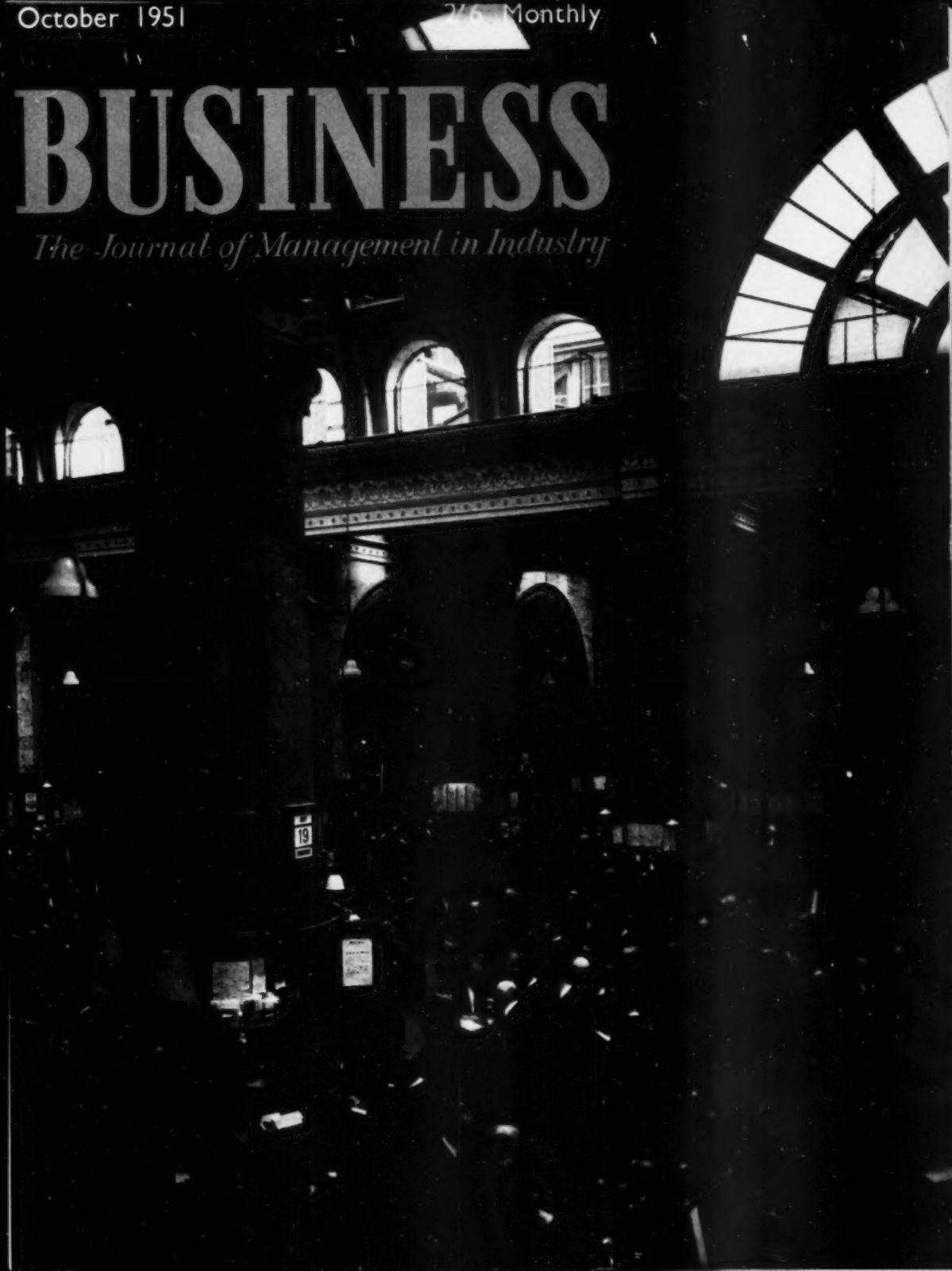


October 1951

2/6 Monthly

# BUSINESS

*The Journal of Management in Industry*





REMINGTON

*Foremost*  
ACCOUNTING MACHINES

... Foremost in Adaptability, Quality of Work and Ease of Operation

## A practical approach to mechanised accounting

It is important to view the problem as a whole. Maximum advantages can only be obtained if a survey is made of existing procedures and a clear conception formed of the information which is necessary.

REMINGTON RAND maintain a staff of Machine Accounting Representatives who are fully qualified to offer competent technical advice and draw up mechanical schemes to meet particular requirements. There is no need today to make drastic

system alterations or to adopt rigid or standard schemes which may be an obstacle to future development and progress.

With the experience available from their various divisions REMINGTON RAND offer, in addition, expert and up-to-date advice in the filing, housing and printing requirements of a modern installation. No other firm provides the same complete service. Write or phone:—

## ***Remington Rand Ltd***

Accounting Machine Division (A.M.14)

COMMONWEALTH HOUSE • 1-19 NEW OXFORD STREET • LONDON, W.C.1

Tel: Chancery 8888. Branches throughout the British Isles.

**CONFIDENTIAL CONSULTATIONS AND SURVEYS WITHOUT OBLIGATION**



# A credit to your business...

## a credit to your desk



### Dictaphone TIME-MASTER leads both in efficiency and looks

BUSINESS MEN all over the country have found their ideas about office dictation changed over-night by the Dictaphone Time-Master. In terms of speed, ease and smoothness of working, Time-Master simplifies their whole office day.

But at the same time, Time-Master is such a neat machine—a trim streamlined beauty you can be proud of on your desk.

#### SO SMALL

The complete Time-Master is only 4½ ins. high, slightly larger than a letterhead, and light enough to be easily portable.

#### SO EFFICIENT

Time-Master records on Memobelts, expendable plastic belts that give uniform, crystal-clear

recording, yet fold flat for mailing or filing without damage.

#### SO DEPENDABLE

Time-Master retains the tested Dictaphone principle of cylindrical recording and is backed by the Dictaphone reputation and service.

#### ONLY THE TIME-MASTER OFFERS ALL THIS

1. Streamlined machine, only 4½ ins. high, slightly larger than a letterhead. 2. Uniformly clear recording and reproduction. 3. Uniform backspacing, immediate place finding. 4. Simple automatic operation. 5. Mailable, filable, expendable Memobelts, low-cost plastic medium. 6. Nation-wide service, Dictaphone dependability.

Write for Time-Master literature to Dictaphone Co. Ltd., Dept. Q, 107, Kingsway, London, W.C.2.

# DICTAPHONE

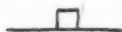
*Regd. Trade Mark*

**ELECTRONIC  
DICTATING MACHINES**

MADE IN GREAT BRITAIN. Branch Offices: BELFAST BIRMINGHAM BRISTOL CORK DUBLIN GLASGOW LEEDS LIVERPOOL MANCHESTER NEWCASTLE  
BUSINESS FOR OCTOBER, 1951

## Your product may be —

*Small*



*or large*



*or light*



*or heavy*



*triangular*



*rectangular*



*Square*



*or rhomboid*



- **NONCURLING GUMMED PAPERS** for labelling every kind of product.
- **"GUMSTRIP" SEALING TAPES & "GUMSTRIP" SEALING MACHINES** for sealing all parcels, packets and cartons.
- **"SAMSON" ADHESIVES** for every trade.
- **SELF-ADHESIVE SEALING TAPES** for—security—protection and airtight sealing.
- **HEATFIX PAPERS** for labelling, packaging etc.
- **WATERPROOF MATERIAL** for home and export packing.
- **THE LIGHTNING LABELLER** moistens gummed labels in a second. Made in 3 in., 5 in. and 9 in. widths.

— but you can be sure it is safely packed if  
you use  **BUTTERFLY BRAND PRODUCTS**

BUTTERFLY BRAND

Made by **SAMUEL JONES & CO., LTD.**  
*The House with the Packaging Service*

NEW BRIDGE ST. LONDON, E.C.4. • GRAMS: NONCURLING LUD LONDON • TEL: CENTRAL 6500

# Time-and-a-half, for half a girl?

Don't blame the girl, blame the *system*!  
Faulty business forms force *any* girl to waste half  
her time on needless paperwork.  
She works full time, even overtime—but  
as far as *producing* goes,  
she's only half a girl.

How different with Fanfold business forms!  
She wastes no time on carbon stuffing . . . carbons  
come *pre-set*. She wastes no time between  
typings . . . forms feed themselves into the machine.  
Realigning? None! Recopying? No. Fanfold  
Limited *combine* forms so that one serves all  
concerned—distribution is fully controlled!

Hard to believe? You can *see* it work . . .  
just call your Fanfold Technical Adviser. He'll  
make a complete survey of your needs, without cost  
or obligation. Then you'll see how every  
girl becomes a *productive* girl  
—almost a girl-and-a-half!



NORTH CIRCULAR RD., LONDON, N.W.2

Telephone: GLAdstone 5477 (4 Lines)

and at BIRMINGHAM, CARDIFF, MANCHESTER,  
SHEFFIELD, GLASGOW, DUBLIN & BELFAST

PLANNERS OF SYSTEMS FOR ECONOMY OF TIME,  
LABOUR AND MATERIALS IN THE OFFICE

*Fanfold*  
for Forms

*Fanfold*  
for Forms

# Quick MARKING on ANY surface

Bins, parcels, bales, boxes, drums . . . whatever the surface . . . the Flo-master FOUNTnBRUSH, with its self-contained store of indelible, fadeless, waterproofing ink, speeds up labelling and addressing.

Here are but a few of Flo-master's uses:

**RETAIL STORES.** Price marking on actual goods, including food packages, Ticket and showcard writing. Displayed stock records, etc.

**ENGINEERING SHOPS.** Coding of parts for assembly, pattern making, duty rotas, stocks, tools, etc.

**ARTISTS AND STUDIOS.** Visuals, finished drawings, exploring new techniques (stroke can be varied from a fine line to  $\frac{1}{2}$  in.).

**SHIPPING DEPARTMENTS.** Coding and addressing bales, drums, boxes, etc. (Flo-master is fadeless and completely waterproof.)

**TEXTILES.** Flo-master ink withstands bleach. Cotton fabric lengths can thus readily be identified during processing.

**OFFICES AND STORES.** File and index marking, duty rotas, stock bins and shelves.

Tax paid. Complete with a dual-purpose cap and 3 interchangeable nibs.

## THE POCKET SIZE FLO-MASTER

25/8 tax paid.  
Complete with  
ink, filler and 3 in-  
terchangeable nibs.

There are two models . . . the "pocket" size for ordinary use and the "KING" size for heavy duty. In both types smooth, even flow is positively controlled by the degree of pressure on the writing surface.

36/8

## King size

*Flo-master*  
BRITISH MADE  
**FOUNTnBRUSH**

Stocked by your usual stationer. If you have difficulty in obtaining the Flo-master write to the manufacturers—Cushman & Denison Co. Ltd., Dept. G, 142/144 Camberwell New Road, London, S.E.5.

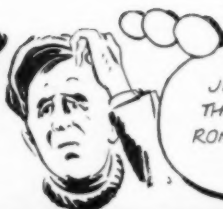


TRADE AND EXPORT ENQUIRIES: BLICK OFFICE EQUIPMENT LTD., LONDON, S.E.5





# RUBBER JOE'S LAST JOB



THE RIPPINGHAM  
JOB TONIGHT. EVERY  
THING PLANNED—HOPE  
RON'S LEFT THE SKYLIGHT  
OPEN.....



NOW  
TAKE THAT—  
AND THAT



PLENTY OF TIME TO CRACK  
THE SAFE.....!.....!  
WHAT'S THAT BELL CLANGING



CRUIKEY—THE RENTRIX  
BELL FROM RIPPINGHAMS,  
MEANS OLD BILL'S STOPPED  
HIS ROUND, WONDER  
WHAT'S UP, BETTER  
HURRY!



YES—LUCKY WE HAD  
THAT NEW RENTRIX  
INSTALLATION

WELL BILL, THE CASH WAS  
SAVED AND YOU HAD A LUCKY  
ESCAPE. HALF-AN-HOUR MORE  
AND YOU'D HAVE BEEN COLD!



.... the Rentrix Unit is the only one which sounds an alarm if a patrol is broken off. It both protects your watchman and keeps him up to scratch as well. It reminds him when each patrol is due, ensures that it is made at the right time intervals—and that he visits every point—and automatically records it on completion. Take my advice—safeguard your premises with the

## Rentrix

AUTOMATIC WATCHMAN'S CONTROL UNIT

RENTRIX LTD (DEPT. B.) MILLFIELDS ROAD CLAPTON E5. AMH. 7843

# 'ENGLISH ELECTRIC'

Every year what was once a shallow mountain loch now produces 130 million units of electricity, bringing better living to the people of Scotland. Loch Sloy is the most ambitious hydro-electric project yet completed in Great Britain. All the turbines and electrical equipment were supplied by 'ENGLISH ELECTRIC'.



## bringing you

The ENGLISH ELECTRIC Company is the only firm in Britain supplying complete plant for hydro-electric installations. This equipment provides light, heat and power for homes and industries all over the world.

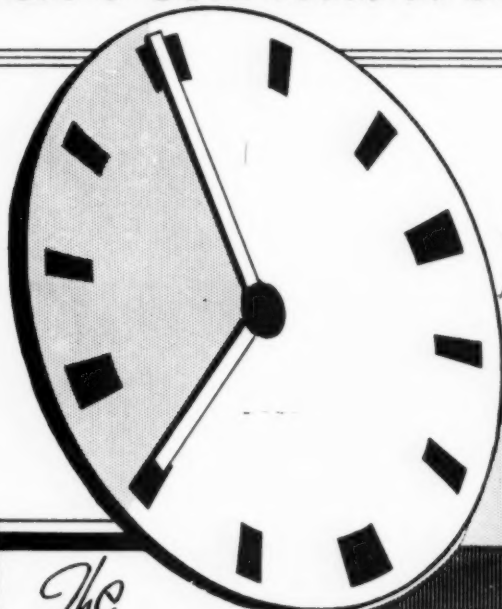
'ENGLISH ELECTRIC' puts the power of electricity at the service of millions.



## better living

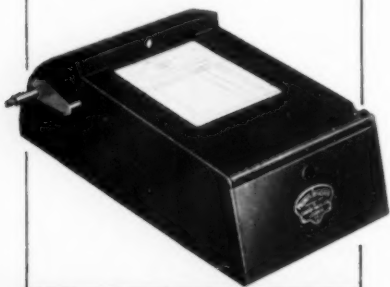
The ENGLISH ELECTRIC Company Limited, Queens House, Kingsway, London, W.C.2

# Save One Third on Typing Time!



## The **PRIMUS STANDARD REGISTER**

For HAND-WRITTEN RECORDS, the Primus Register used in conjunction with Continuous Stationery ensures the same speedy, smooth operation, while a copy automatically locked in the machine provides your auditor with a check on each transaction.



### —ISN'T IT WORTH YOUR INVESTIGATION ?

By eliminating all unproductive operations—interleaving and extracting loose carbon sheets, inserting and aligning separate stationery forms PRIMUS saves one hour in every three on invoicing, works orders, goods received notes, purchase orders and other tasks of a repetitive nature. PRIMUS forms, used in conjunction with the attachment which will fit any make of typewriter, are fed smoothly into the machine so that the typist is engaged all the time on productive work.

## PRIMUS

*Continuous  
Stationery*

### **CARTER-DAVIS LTD.**

QUEEN ELIZABETH ST., LONDON, S.E.1. Tel: HOP 0204-5-6  
Branches at: BIRMINGHAM—MANCHESTER—DUBLIN—GLASGOW

BUSINESS

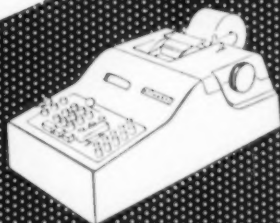
**X** MULTIPLIES

**÷** DIVIDES

**+** ADDS

**—** SUBTRACTS

**olivetti** **DIVISUMMA**



**&** **PRINTS**  
its own record of the  
calculations involved

The unique characteristics of the Olivetti Divisumma Printing Calculator can be stated in those few words. The operation of the machine is simple enough to be mastered in 15 minutes. The Olivetti name behind it means that it has already proved its reliability.

*Write for fuller details or ask for a demonstration.*

**olivetti**

BRITISH OLIVETTI LTD • 10 BERKELEY SQUARE • LONDON, W.1

DIVISUMMA PRINTING CALCULATOR • ELECTROSUMMA ADDING MACHINE • TYPEWRITERS: STANDARD • ELECTRIC • PORTABLE  
T.M.10

# The Cards go Round and Round-

Here is ROLLINDEX, the *rotary* file. Any size of card can be filed in the rotating wheels which turn at a touch of the fingers — bringing the card you want to the top every time. No reaching, no walking back and forth. The operator just sits comfortably in control of as many as three cabinets, each (of the three-wheel type) containing 24,000 cards. Never has filing been so simplified — so compactly accommodated. And never has a system saved so much time and space. Remember that no special cards are required . . . We can advise you on a ROLLINDEX installation for new or existing records.

- ★ Your present cards can be filed in ROLLINDEX without modification.
- ★ Non-standard cards, documents, etc., can also be easily and safely filed in ROLLINDEX.
- ★ ROLLINDEX can be constructed for any special requirements.
- ★ The capacity of a standard ROLLINDEX unit is from 5,000 to 24,000 standard cards.

and come out **HERE**

- ★ An ingenious device holds and protects the contents.
- ★ ROLLINDEX is built in 1 to 5 wheel units and batteries can be installed to provide any capacity.



## Rollindex

ROTARY FILING SYSTEM

Patent pending 105744

*Write or telephone for illustrated folder No. '103'*

*Don't forget to state the size and quantity of cards you now use.*



## Art Metal

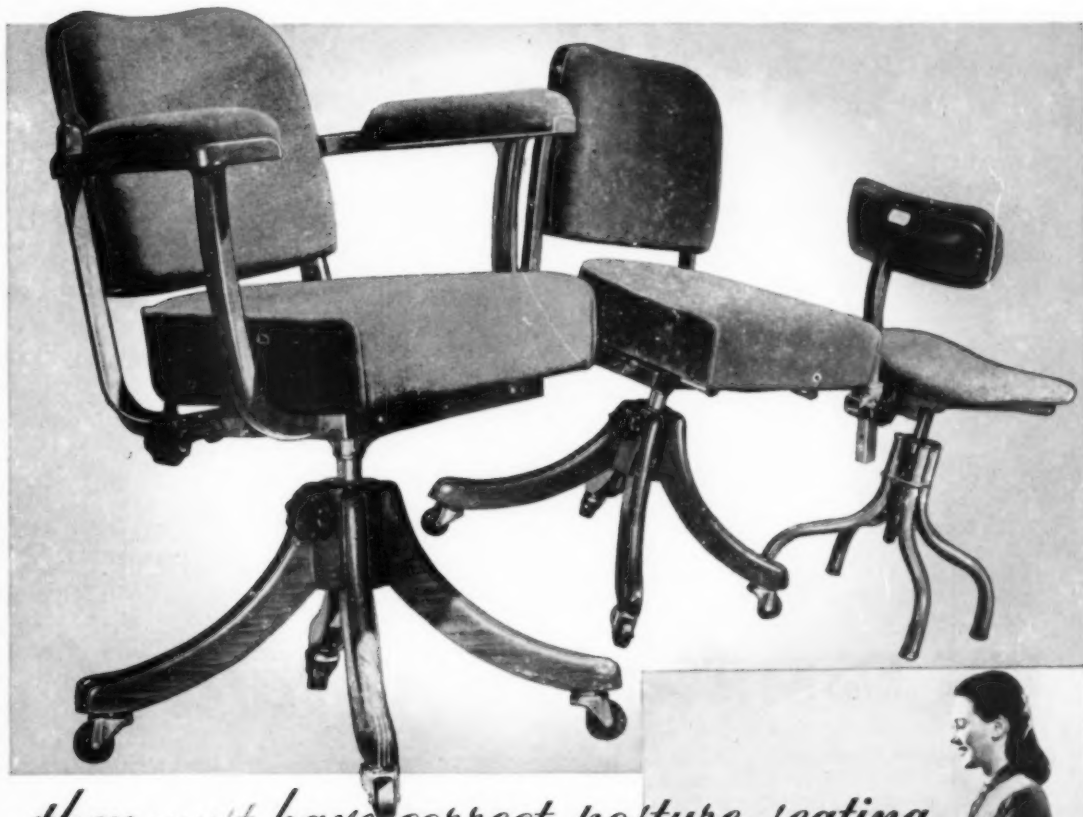
CONSTRUCTION COMPANY

199/203 Buckingham Palace Road, London, S.W. 1

Telephone: SLOane 5201



*For comfort and efficiency. . . .*



*they must have correct posture seating*

There is a suitable Tan-Sad Chair for everyone in your firm, from director to typist, offering maximum comfort and encouraging a correct sitting position. Everyone does better work in a Tan-Sad.

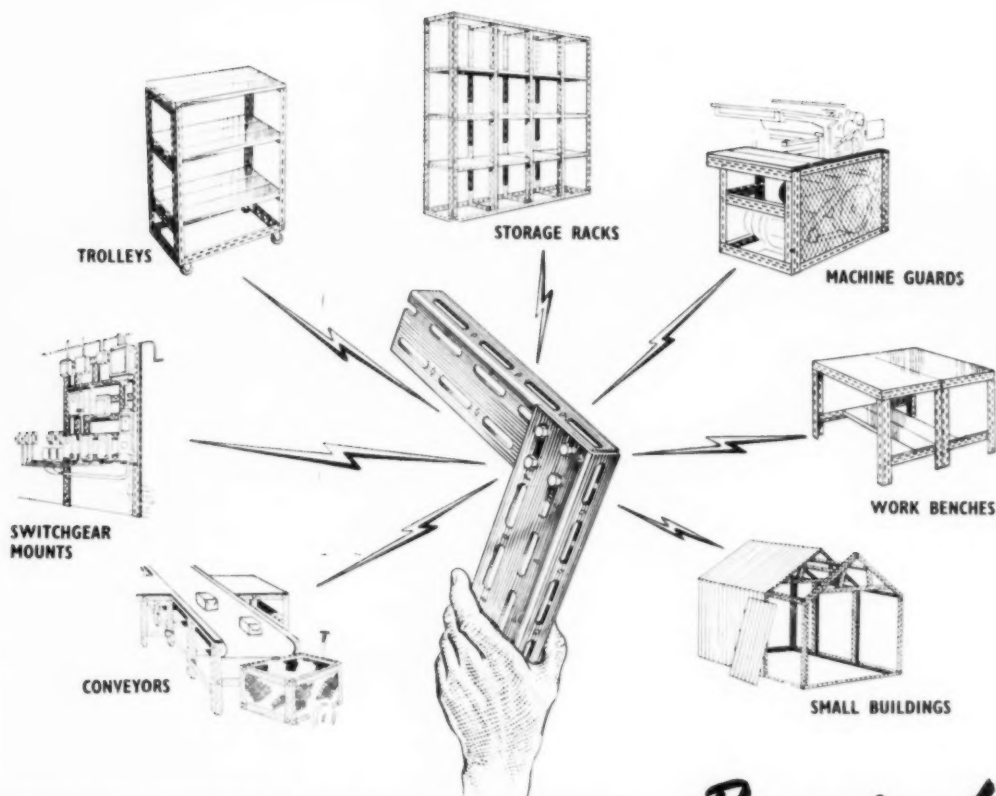
# Tan-Sad

Manufacturers and patentees:

THE TAN-SAD CHAIR CO. (1931) LTD.  
AVERY HOUSE • CLERKENWELL GREEN • LONDON • E.C.1



**SPECIALISTS IN SCIENTIFIC SEATING FOR INDUSTRY & COMMERCE**



## THAT EXTRA EQUIPMENT? *Presto!*

Like a flash comes the answer to the firm that keeps a stock of Dexion handy—just by cutting Dexion Angle to length and bolting it together. You can build what you want, to the dimensions you want, precisely when you want it. You can make the most rational use not only of your floor area but of the whole space above right up to your roof—

an astonishingly rigid and workmanlike job too, every time!

Cost? You'll never know the pounds it saves until you try it. But thousands of users could tell you—users like I.C.I., Hoover, B.S.A., J. Lyons & Co., Vickers-Armstrong, de Havilland, to mention only half a dozen.

SAVES MONEY

**DEXION**  
SLOTTED ANGLE

SAVES TIME

*Write or phone for Illustrated Folder A 9. Better still, come and see an actual installation (no appointment needed) at—34, Fouberts Place, W.1. (Near Liberty's)*

**DEXION LTD.**, Triumph House, 189 REGENT ST., LONDON, W.1. 'phone: REGent 4841-5 'grams: Dexion, Piccy, London.

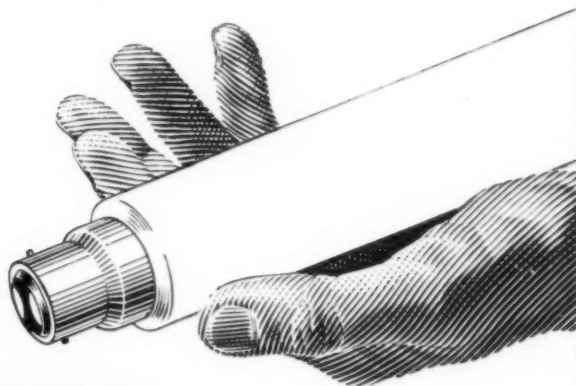
**Visit the Dexion Exhibition, Church House, Westminster, London, S.W.1.**

**October 23rd—26th. 10 a.m. 6 p.m. daily.**



***Pick  
of  
the  
bunch***

All makes of fluorescent lamps look 'much of a muchness,' but eventually you will come to know the advantage of installing Osram. Good workmanship and vast technical knowledge — both in research and manufacture — contribute to the excellence of the finished article.

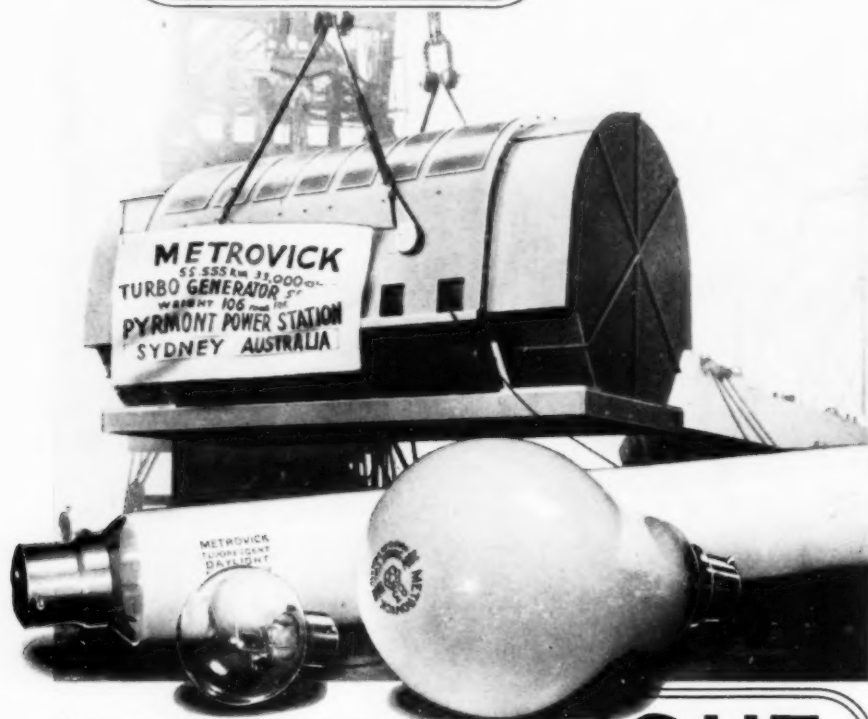


**Osram** *the wonderful lamp*  
**FLUORESCENT**

A **S&C** PRODUCT

THE GENERAL ELECTRIC CO. LTD., MAGNET HOUSE, KINGSWAY, LONDON, W.C.2

# POWER



Metrovick Turbo-Generators are famous for reliability all over the world. Here is one of 55,555 kVA being shipped to Australia. Millions of people depend on Metrovick equipment for their electricity.

You are assured of that same reliability of service when you buy

# LIGHT

## METROVICK LAMPS

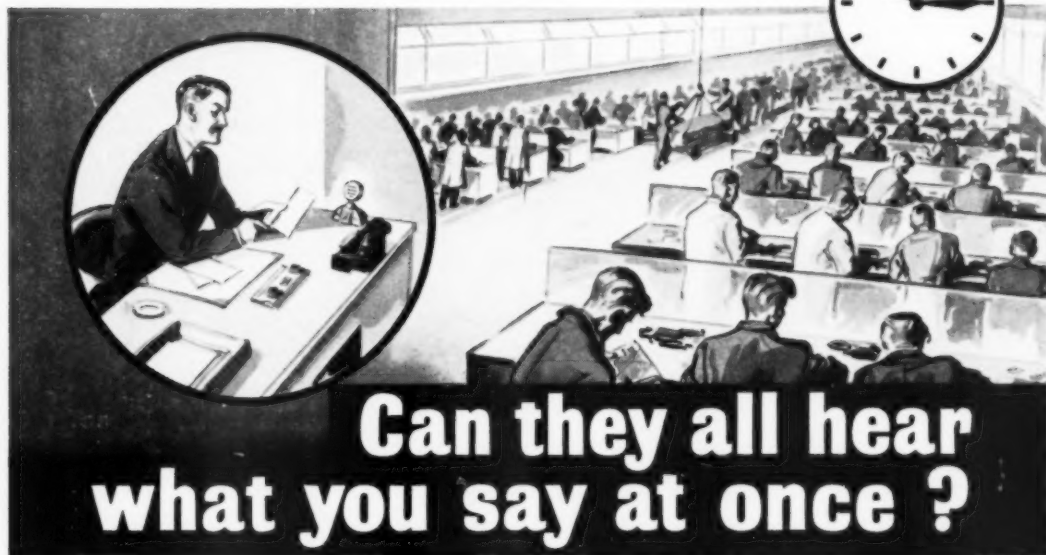
METROPOLITAN-VICKERS ELECTRICAL CO. LTD.

ST. PAUL'S CORNER, 1-3 ST. PAUL'S CHURCHYARD, LONDON, E.C. 4.

*Member of the A.E.I. group of companies*

S/A 009

WHEN IT'S A QUESTION OF TIME...



## Can they all hear what you say at once ?

Managements' contact with their employees must not weaken as the business grows in size. The personal touch, so essential to productive co-operation must be preserved. Through T.R. Internal Broadcasting the voice of Management carrying announcements, instructions, encouragement, praise or advice, can be heard by everyone throughout the premises at the same time. No one need leave his job and the

speaker remains at his desk. Everyone saves time and the personal link is preserved—but T.R. Internal Broadcasting can do far more than that to speed the days' work for you. Internal Broadcasting, Internal Telephones, Time Recorders installed and maintained under guarantee by Telephone Rentals Ltd.—that's T.R. Service. Spend a profitable moment now to write for full particulars.



**SERVICE**

***speeds production***

### **INTERNAL BROADCASTING**

*for staff location, time signals, works relations, announcements and music.*

### **INTERNAL TELEPHONES**

*for speedy speech contact.*

### **TIME CONTROL**

*for making man-hours more productive.*

WRITE TO INF. B.4, KENT HOUSE, RUTLAND GARDENS, LONDON, S.W.7, OR YOUR NEAREST BRANCH—14 THROUGHOUT THE UNITED KINGDOM. ALSO JOHANNESBURG, CAPE TOWN, PARIS AND BRUSSELS





**Strong...**

Pressure proofed by patented process and tested at every stage. Only proven leads go into Venus Drawing Pencils



**SMOOTH...**

A patented colloidal process removes all grit and impurities—they *must* be smooth

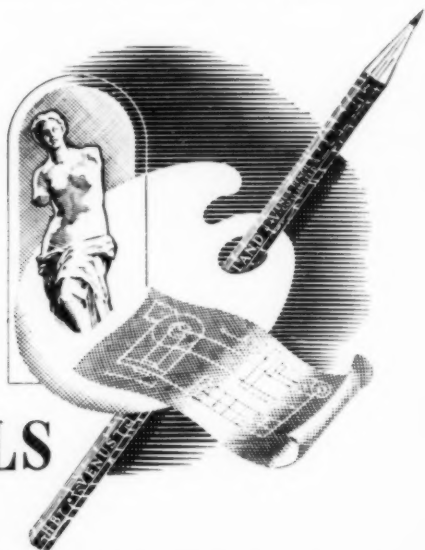


**ACCURATE...**

Accurate through and through—graded and tested by experts. Venus Drawing Pencils make the right mark every time

THE PENCIL WITH THE CRACKLE FINISH

**V**ENUS  
*Perfect* PENCILS



THE VENUS PENCIL CO., LIMITED, LOWER CLAPTON ROAD, LONDON, E.5

*The Hall-mark of Quality*

**NEW STREAMSTYLE AUTOMATIC  
NUMBERING  
MACHINES**



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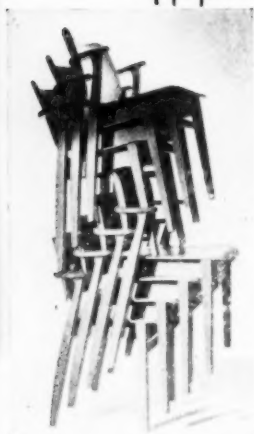
991227

991228

**ENGLISH NUMBERING MACHINES LIMITED**  
DEPT 3B, QUEENSWAY ENFIELD MIDDLESEX  
TELEPHONE: HOWARD 2611/5 TELEGRAMS: NUNGRADCO, ENFIELD



*Britain's Largest Manufacturers of Numbering and Counting Machines*



# stax

*a stacking chair of  
exceptional comfort and  
usefulness, space saving,  
easily cleared, it has infinite  
possibilities for hotels, clubs,  
offices, canteens, concert halls,  
church halls.*

**MORRIS OF GLASGOW**

*Write for details and prices to  
H. MORRIS & CO. LTD., MILTON STREET, GLASGOW, C.2.*

# PUNCHED CARDS



## put you in the picture

Which part of your business do you wish to bring into focus?—a business transaction? . . . manufacturing operation? . . . costing element? . . . factory activity?

No matter — punched cards will put you in the picture . . . a picture in sharp relief and accurate detail.

Given this clarity of vision, business control and management is simplified to a great extent. Loads can be adjusted, overlapping and duplication avoided and a keen eye directed on costing.

Powers-Samas methods reveal hidden facts, streamline accounting and costing procedures, cut costs and greatly reduce the human error factor.

There is a range of Powers-Samas machines to suit all needs and budgets in every field of industry, commerce and public service. Let us send you fuller information.



## **POWERS-SAMAS**

**POWERS SAMAS ACCOUNTING MACHINES (SALES) LIMITED**

**POWERS-SAMAS HOUSE · HOLBORN BARS · LONDON · E.C.1**

# TAYLORS *for all makes of* TYPEWRITERS

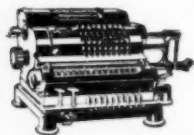
★ Adding Machines, Duplicators, Cash Registers, Calculators, Time Recorders, and All Business Appliances **BOUGHT, EXCHANGED, HIRED AND REPAIRED**

## Save Time—HIRE an Adder for Stocktaking

**ADDOGRAPH** the simplest Portable, adding, and listing machine — delightful to use. 8 col. to add from  $\frac{1}{4}$ d. to £9,999 19s. 11 $\frac{1}{2}$ d. 9 col. to add from  $\frac{1}{4}$ d. to £99,999 19s. 11 $\frac{1}{2}$ d. Hand and electric models with or without subtraction and wide paper carriages. No modern office can afford to be without one.



**THE TAPPIT ALL-RUBBER DAMPER.** Ever Ready and hygienic. A squeeze controls feed of moisture. 2/- post free

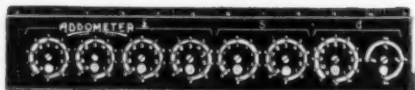


**ROTARY CALCULATORS ALL MAKES.** For all calculations. Multiply, divide, add and subtract in 1/10th time taken to do so mentally.



**ELIMINATE LOSS AND FRAUD BY USING A "SAFEGUARD," THE BEST CHEQUE PROTECTOR.** Used by leading banks and firms. Do you realise that an altered cheque is your own liability? Price £18 18s. All makes of Cheque Writers at bargain Prices.

## NO MORE ERRORS — IF YOU USE THE GUARANTEED ADDOMETER



Rapid Automatic Addition and Subtraction. Rests flat on the books. For Decimal or Ordinary Figures and Feet and Inches etc. **FOR POCKET OR DESK.** So simple anyone can use it. In Plush-lined duroid case Size, 11 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x  $\frac{1}{2}$ ".

When ordering state for what purpose required.

All models price 6 guineas.

## ★ WANTED URGENTLY

*HIGHEST PRICES PAID for all Makes of Modern Office Machinery: Adders, Calculators, Cashiers, Addressers, Duplicators, Typewriters, Steel Safes, and Steel or Wood Office Furniture*

## ★ IN STOCK

A few Visible Index Systems for sale. Safes, Desks, Chairs and Tables

## TAYLORS TYPEWRITER MARKET

*Write, Call or 'phone HOLborn 3793*

74 CHANCERY LANE (Holborn End) LONDON W.C.2 and at Maidenhead



# You can forget—with confidence!

Cope-Chat VERTICAL VISIBLE remembers for you . . . it ensures perfect account control . . . with faster posting—yet eliminates misfiling or loss of cards.

The Vertical Visible System is extremely adaptable and dovetails with any machine-posted record.



Contact  
**COPE-CHAT**

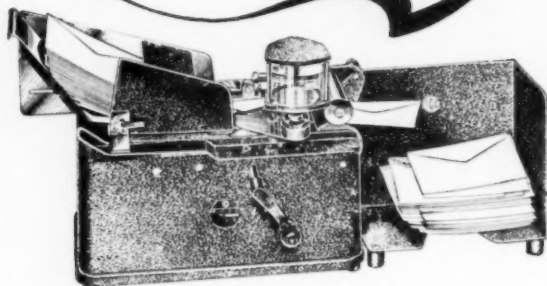
## THE COPELAND - CHATTERSON CO. LTD.

London Office & Showrooms: Exchange House, Old Change, E.C.4  
Telephone: CITY 2284

Registered Office & Works—STROUD, GLOS.

Branches at: Birmingham, Bristol, Glasgow, Leeds, Leicester, Liverpool, Manchester, Newcastle-on-Tyne, Sheffield and South Wales—and Agents throughout the world.

**"Outgoing mail—  
I seal it quickly,  
correctly..."**



**Anybody can do it...  
with an**

**ICC**

**ENVELOPE-SEALING MACHINE**

Your mail gets away on wings when you use an ICC machine. Write for full details of these inexpensive hand and power-operated models—the finest obtainable—or let us arrange a demonstration in your office.

International Coin Counting Machine Co. Ltd.  
Alexandra Road, Enfield, Middlesex  
Telephone: Howard 1886

Northern Sales Office: 9 Quebec Street,  
City Square, Leeds. Phone: Leeds 21323



Makers of letter-opening, envelope-sealing, coin-counting  
and token-counting machines.

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*When you look into the  
matter, it pays always to  
buy BARCO*

BARCO Carbon Papers are  
durable, yield clear, uniform  
copies and are made for ALL  
purposes.

**CHOOSE QUALITY—  
Buy Barco**

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MANUFACTURERS FOR OVER 60 YEARS  
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ENGLAND



## Start the job right . . .

**W**HEN you are planning for the future, the decisions which seem good today must be good several years hence. This is particularly true when new office methods are being considered.

Isn't it wise at such a time, therefore, to summon the resources of an organisation specialising in such problems? Thousands of firms take this step—and get valuable help from their Kalamazoo representative. He is constantly meeting similar problems to your own. Calling him in to help you decide the best way to solve them, is surely a good way to start the job.

Every firm choosing Kalamazoo for its office automatically enlists a free installation service. Not only do you start right, but Kalamazoo Service Demonstrators ensure that the new method is completely understood by your staff, and fits smoothly into office routine. The job is kept right.

## . . . and keep it right



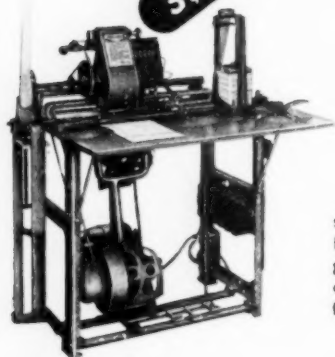
Kalamazoo Ltd., NORTHFIELD, BIRMINGHAM, 31

# PROGRESS



How efficient is your mailing department? With the ADDRESSALL machine you are able to automatically address for dispatch up to 3,000 envelopes per hour—with absolute accuracy

To those concerns who have the problem of regular mailings the ADDRESSALL machine will show a definite saving of time and money.

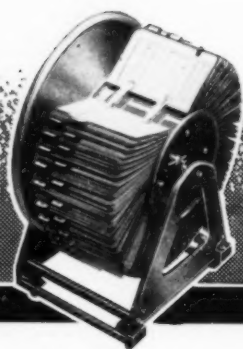


Why not send for our brochure which gives fuller details and information.

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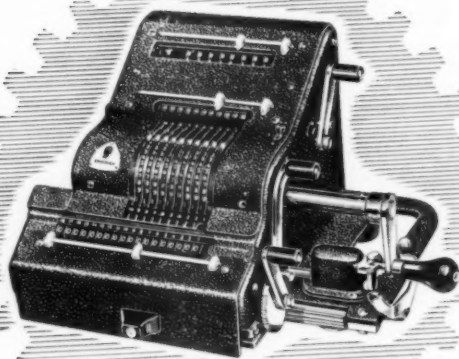
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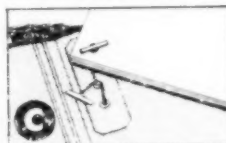
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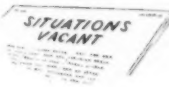
At Messrs. Fortescue and Co.  
We had six typists in a row  
'Till one upset the status quo  
By telling us she wished to go  
And marry Bert her ardent beau.



The remaining five with great devotion  
Set to work in perpetual motion.  
Imagine, please, our strong emotion  
When Millie Millbank had a notion  
To join the 'Wrens' and sail the ocean.



You should have seen those fingers fly  
To cope with work now piling high.  
We advertised, in vain, to try  
To catch some smart young typist's eye  
But all were heedless of our cry.

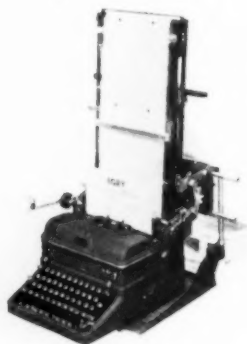


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Copeland Chatterton Co. 21  
Jones, Percy (Twinnock) 64

## ACCOUNTING MACHINES

Burroughs Adding Machine Ltd. 32  
National Cash Register 49  
Powers-Samas Ltd. 19  
Remington-Rand Ltd. 19

Cover ii

Underwood Elliott Fisher 35

## ACCOUNTING SYSTEMS

Anson, Geo. & Co. Ltd. 20  
Art Metal Construction 30  
Copeland-Chatterton Co. 21  
Roneo Ltd. 59  
Shannon Ltd. 73

## ADDING MACHINES

Block & Anderson Ltd. 25  
Bulmer's (Calculators) 69  
Burroughs Adding Machine Ltd. 32  
National Cash Register 49  
Office Machinery Ltd. 79  
Sumlock Ltd. 73

## ADDRESSING MACHINES

Addressall Machine Co. 24  
Adrema Ltd. 77  
The Hayward Co. Ltd. 59  
Roneo Ltd. 59

## ADDRESSING MACHINE ATTACHMENT

Fanfold Ltd. 3  
Smith, W. H. & Son Ltd. 11

## AIR TRANSPORT

Aer Lingus 33  
B.O.A.C. 33  
Pan American Airways 33

## ASSURANCE

General Accident Fire & Life Assurance Corp. 33  
Prudential Assurance Co. 33

## BANKS

Midland Bank Ltd. 33

## BATTERIES (Heavy Duty)

Nife Batteries Ltd. 33

## BLINDS

Avery, J. & Co. 33

## BOOKS & PUBLICATIONS

Pitman, Sir Isaac & Son 33  
Psychology Publishing 33

## BROADCAST MUSIC

Central Rediffusion Services Ltd. 67  
Dictograph Telephones 61  
Philips Electrical Ltd. 96  
Telephone Rentals Ltd. 15

## BRUSHES

Harris, L. G. & Co. 33

## BUSINESS EQUIPMENT AND ACCESSORIES

Blick Office Equipment 4  
Block & Anderson Ltd. 25  
Coombs, H. A. Ltd. 115  
Copeland-Chatterton Co. 21  
Jones, Samuel & Co. Ltd. 2  
Roneo Ltd. 59  
Shannon Ltd. 73  
Standard Office Supplies 112

## CALCULATING MACHINES

Block & Anderson Ltd. 25  
British Olivetti Ltd. 9  
Bulmer's (Calculators) 69  
Burroughs Adding Machines Ltd. 32  
London Office Machines 10  
Sumlock Ltd. 73  
Wood, Gilbert Ltd. 77

## CANTEN EQUIPMENT

Bartlett, G. F. E. Ltd. 10  
Catering & Industrial Furniture Ltd. 10  
Dawson Bros. Ltd. 10  
Farquharson, J. & Sons 107

## CASTINGS

Renfrew Foundries Ltd. 34  
Star Foundry Co. Ltd. 34

## CLOCKS, WATCHMEN'S

Blick Time Recorders 76  
Rentrax Ltd. 6

## COIN COUNTING

MACHINES

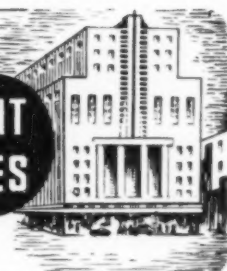
International Coin Counting Machine Co. 22

## CTOBER, 1951

## YOUR GUIDE TO

# BUSINESS EQUIPMENT SERVICES & SUPPLIES

## IN THIS ISSUE...



## COLLEGES AND COURSES

Conversation Studies 27  
Lingaphone Institute 27  
Speaker's Club 27  
Jones, G. F. (Senogism) 97

## CONTINUOUS STATIONERY

Carter-Davis Ltd. 8  
Copeland-Chatterton Co. 21  
Dickinson, John & Co. 21  
Egry Ltd. 28  
Fairfold Ltd. 3  
Lamson Paragon Co. 3  
Smith, W. H. & Son Ltd. 11

## COUNTING AND NUMBERING MACHINES

English Numbering Machine 17  
Rentrax Ltd. 6

## CYCLE PARKS

Abix Ltd. 112  
Constructors Ltd. 107  
Odoni, Alfred A. & Co. 107

## DICTATING AND RECORDING EQUIPMENT

Dictaphone Co. Ltd. 1  
E.M.L. Ltd. 63  
Ediphone Voice Writing 63  
Hayeraft, M. & L. Ltd. 116  
London Office Machines 107  
Office Machinery Ltd. 79  
Thermionic Products 111  
Trevor-Johnstone Co. 111  
Wirek (Electronics) Ltd. 111

## DRAWING OFFICE EQUIPMENT

Haycraft, M. & L. Ltd. 116  
West, A. & Partners 84

## DUPICATING MACHINES

Block & Anderson Ltd. 25  
Bulmer's (Calculators) 69  
Eldams Duplicator Co. 66  
Fernaprint Ltd. 66  
Gestetner, D. Ltd. 66  
Kaye's Rotaprint Ltd. 66  
Office Machinery Ltd. 79  
Roneo Ltd. 59

## ELECTRIC CLOCKS

Dictograph Telephones 61  
Gent & Co. Ltd. 91  
International Time Recording Co. Ltd. 71  
Magna Time Co. 92  
Smiths English Clocks 92  
Synchronic Time Recording Co. Ltd. 108  
Telephone Rentals Ltd. 15

## ELECTRICAL PLANT

Crompton-Parkinson 96  
Philips Electrical Ltd. 96

## ENGRAVERS AND BLOCKMAKERS

Gee & Watson 110

## EXHIBITION FITTERS

Armstrong & Co. (Wridale) 110

## FACTORY EQUIPMENT AND ACCESSORIES

Constructors Ltd. 107  
Sleber, James Equipment 106

## FILING SYSTEMS

Anselock Ltd. 94  
Art Metal Construction 30  
Copeland-Chatterton Co. 21  
Economy Filing Co. Ltd. 26

## EXPANDEX VISIBLE FILING

Jones, Percy Ltd. 64  
Kalamazoo Ltd. 23  
Remington-Rand Ltd. 116

Cover iii

## RONEO LTD.

Shannon Ltd. 73

## FILM PROJECTORS

Cinex Ltd. 116  
Wallace Henton Ltd. 116

## FIRE PROTECTION

No-swift Ltd. 116

## FLOORING

Great Met. Flooring Co. 96  
Perring, John Ltd. 75  
Rubbalors Co. Ltd. 116

## FOLDING MACHINES

Burcraft Folding Mchs. 116  
Unfold Mailing Mchs. 116

## HEALTH SERVICES

Croson Ltd. 102  
Cuxson Gerrard & Co. 102  
Freder Bros. 98  
Harcraft Ltd. 100  
Hunt & Colleys Ltd. 101  
Hygiene Products Ltd. 36  
Lambart & Smyth Ltd. 103  
Peter's Automatic Mchs. 103  
Sanguard Appliances 101

## HEATING

Smith & Wellstood Ltd. 104  
Spital Tube Ltd. 107

## HOTELS

Branksome Tower Hotel 113

## INDUSTRIAL CLEANING

B.V.C. & Eng. Co. Ltd. 88  
Dixon, E. G. & Co. Ltd. 88  
Lamson Eng. Co. Ltd. 88

## INFRA-RED DRYING

De la Rue, Thos. Ltd. 89

## LETTER OPENING MACHINES

International Coin Counting Machines Co. 22

## LIGHTING

Crompton-Parkinson 96  
G.E.C. Ltd. 13, 86  
Met-Vick Electrical Co. 14  
Siemens Electric Lamps 91

## LOOSE LEAF LEDGERS AND SYSTEMS

Art Metal Construction 30  
Copeland-Chatterton Co. 21  
Jones, Percy (Twinnock) 64  
Kalamazoo Ltd. 23  
Shannon Ltd. 73

## LUBRICANTS

Price's Lubricants Ltd. 96

## MECHANICAL HANDLING

Lamson Eng. Co. Ltd. 88  
Lansing Bagnall Ltd. 93  
Pawer Jacks Ltd. 93  
Rubery Owen Ltd. 93  
T. & T. Works Ltd. 93  
Victrolac Ltd. 93  
Wingrove & Rogers Ltd. 93

## MICROFILM CAMERAS

Edison Swan Electric Co. 113  
Kodak Ltd. 62

## MOTORS (RE-CONDITIONED)

Morris Commercial Cars 85

## NOISE PREVENTION

Burgess Products Ltd. 109

## OFFICE FURNITURE (STEEL)

Anselock Ltd. 94  
Art Metal Construction 30  
Bawn, W. B. & Co. Ltd. 116  
Cave, C. W. & Co. Ltd. 24  
Constructors Ltd. 107  
Dare-Ingis Ltd. 103  
Everaunt Ltd. 103  
Milners Safe Co. Ltd. 107  
Office Furnishers Ltd. 70  
Office Machinery Ltd. 79  
Perring, John Ltd. 75  
Roneo Ltd. 59  
Rubery Owen & Co. Ltd. 11  
Tan-Sad Chairs Co. 11

## OFFICE FURNITURE (WOOD)

Abbott Bros. (Southall) 116  
Cave, C. W. & Co. Ltd. 24  
Mason, E. N. & Sons 111  
Myers of Moorgate 111  
Office Furnishers Ltd. 70  
Office Machinery Ltd. 79  
Perring, John Ltd. 75  
Shannon Ltd. 73  
Simples Ltd. 73

## OVERALLS

Wheeler, H. & Co. Ltd. 112

## PACKING SUPPLIES

Bowaters Fibre Containers Ltd. 116  
Britannia Folding Box Gashorn, John & Co. 68  
Johns, Son & Watts 68  
Jones, Samuel & Co. 2  
Universal Pulp Containers Ltd. 116

## PAINTS

British Paints Ltd. 116

## PAPER MERCHANTS

Bowaters Sales Co. Ltd. 116

## PARTITIONING

Anderson, C. F. & Son 116

## PENS AND PENCILS

Venus Pencil Co. 16  
Waterman Pen Co. Ltd. 16

## PHOTOGRAPHIC REPRODUCTION EQUIPMENT

Edison Swan Electric 113  
Grant Production Co. 71  
Orzald Co. Ltd. 71  
Photostat Ltd. 109  
Ruthurst Ltd. 109

## POSTAL FRANKING MACHINES

Roneo-Neopost Ltd. 72  
Universal Postal Frankers 72

## PRESSINGS

Johnson, Thos. Ltd. 116

## PRINTING MACHINES

Kaye's Rotaprint Ltd. 66  
Walter, J. & H. Ltd. 98

## RIBBONS AND CARBONS

Columbia Ribbon Mfg. 93  
Kolok Mfg. Co. 93  
Richardson, W. J. & Sons 22

## ROTARY REPRODUCER

Kaye's Rotaprint Ltd. 66

## SAFES

Milners Safe Co. Ltd. 107  
Remington-Rand Ltd. 116

## SEATING

Dare-Ingis Products 103

Everaunt Ltd. 116  
Leabank Chairs Ltd. 119  
Office Machinery Ltd. 79  
T.A. Products Ltd. 112  
Tan-Sad Chair Co. Ltd. 11  
Morris, H. & Co. Ltd. 15

## SORTING DEVICES

Ambidex Equipment Co. 116

## STEEL STORAGE EQUIPMENT

Brown, F. C. 31  
Constructors Ltd. 107  
Copeland-Chatterton Co. 21  
Dexon Ltd. 12  
Harvey, G. A. & Co. 75  
Milners Safe Co. Ltd. 107  
Odoni, Alfred A. & Co. 107  
Randallrak Ltd. 59  
Roneo Ltd. 59  
Westwood, Jos. & Co. 116

## TABULATING MACHINES

British Tabulating Machine Co. Ltd. 116  
Cave, C. W. & Co. Ltd. 24  
Powers-Samas Ltd. 19

## TARPAULINS

Lomas, S. & Co. Ltd. 116

## TELEPHONE AMPLIFIERS AND ACCESSORIES

Fonadek (Branson) Ltd. 36  
Televox Ltd. 36  
Telford (London) Ltd. 36

## TELEPHONES AND SOUND EQUIPMENT

Central Rediffusion Services Ltd. 67  
Communication Systems Dictograph Telephones 61  
Edison Swan Electric Co. 113  
Hadley Sound Equipment 113  
Magna Time Co. Ltd. 92  
Philips Electrical Ltd. 96  
Pye Telecommunications 31  
Reliance Telephone Co. 15  
Telephone Rentals Ltd. 15

## TEMPERATURE CONTROL

Smith's English Clocks 116

## TICKET PRINTING MACHINES

Dapag (1941) Ltd. 65

## TILING

Woodcroft, Geo. & Son 26

## TIME RECORDERS

Blick Time Recorders 89  
Dictograph Telephones 61  
Gent & Co. Ltd. 91

## TRANSFER (PAINT)

Trapnax Ltd. 116

## TYPEWRITERS AND ACCESSORIES

Barlock (1925) Co. 9  
British Olivetti Ltd. 9  
British Typewriters Ltd. 9  
Imperial Typewriter Co. 95  
International Time Recording Co. Ltd. 71  
Lodgegate Typewriter Co. 113  
Remington-Rand Ltd. 5  
Royal Typewriters 74  
T.S. (Office Equipment) 20  
Taylor's Typewriter Co. 20  
Vari-Typewriter Ltd. 34  
Underwood Elliott Fisher 34

## VENTILATING EQUIPMENT

Colt Ventilation Ltd. 98  
G.E.C. Ltd. 98  
Walter, J. & H. Ltd. 98

## VISIBLE RECORDS

Art Metal Construction 30  
Bulmer's (Calculators) 69  
Cave, C. W. & Co. Ltd. 24  
Copeland-Chatterton Co. 21  
Kalamazoo Ltd. 23  
Mason, E. N. & Sons 111  
Remington-Rand Ltd. 116

Cover iii

Rollindex 10

Roneo Ltd. 59

Solex Ltd. 59

Shannon Ltd. 73

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# BUSINESS

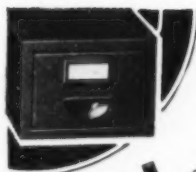
The Journal of Management in Industry

## CONTENTS FOR OCTOBER, 1951

BUSINESS NEWS	Page
THE MARCH OF BUSINESS .....	33
SALIENT FIGURES OF THE MONTH .....	35
TRENDS IN EXPORTS .....	37
LOOK OUT FOR WHAT'S NEW .....	54
<b>POLICY AND MANAGEMENT</b>	
DOLLAR MARKET IS TODAY'S OPPORTUNITY .....	41
THIS NEW SET-UP BREAKS SALES RECORDS BRIAN CUMMINGS	44
INSIDE THE STOCK EXCHANGE .....	48
PRODUCTIVITY THROUGH PIECEWORK... A. K. ASTBURY	50
MANAGEMENT AT WORK .....	55
<b>ADMINISTRATION AND OFFICE PRACTICE</b>	
BONUS SCHEME SOLVES LABOUR PROBLEM ... C. BRYANT	57
EFFICIENCY THROUGH BETTER STATIONERY HAMISH ROBERTSON	60
NEW FOR YOUR OFFICE .....	66
SHORT CUTS TO OFFICE EFFICIENCY .....	72
OFFICE EQUIPMENT INDUSTRY NEWS .....	76
OFFICE SUPPLIES AND ACCESSORIES .....	114
<b>INDUSTRIAL MANAGEMENT AND EQUIPMENT</b>	
EFFICIENCY CHECK SAVES COAL ... A. G. THOMSON	78
MORE SPEED, LESS SPACE ... ROBERT SPARK	82
INDUSTRIAL EQUIPMENT SURVEY .....	88
<b>HEALTH — WELFARE — CANTEEN</b>	
VISUAL AIDS HELP NEW EMPLOYEES ... FRANK G. CASEY	99
SAFEGUARDING CANTEEN CUSTOMERS... DAVID EARLY	105

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# The MARCH of BUSINESS

## TURN OF THE TIDE?

**H**AS the turn been reached in raw material and wholesale prices and has the downward trend begun after the continuous and sharp rises of the last two to three years? This is a most important question for every businessman. The April statistics showed a drop in the over-all average figures of wholesale and raw material prices for the first time in exactly two years. Many commentators have rushed to the conclusion that this means that the tide has turned in raw material and wholesale prices, that we are now at the beginning of a period of falling prices, and that businessmen should take steps accordingly.

But is this valid? Is it good judgment to decide from a few month's figures alone? Prices of materials used in the mechanical engineering, electrical machinery, and building and civil engineering industries have continued to rise. Already during August the price of zinc has turned again sharply in an upward direction; notifications have come of advances in steel prices; probably the price of coal and the cost of transport will increase; wool sales have not maintained the reduced prices which they did in July.

Every businessman, and certainly every manufacturer and trader, should to-day watch the raw material and wholesale price level more closely than ever; should seek every source of information about such figures; and should prepare plans for a continuing downward trend, but equally should not make drastic changes in policies to carry out these plans until the trend becomes more marked and more certain.

**A**N international industrial research institute to serve the European economy will be established in Europe this autumn. To be known as Battelle International

*Institute, it is being established by Battelle Institute, Columbus, Ohio, U.S.A. It will establish research investigations in existing research institutes in Europe and in European universities and technical schools. It will also operate its own laboratories on the Continent.*

*As with the parent organization, financial support will be derived from industrial sponsorship, from endowment, and from income from patents owned by Battelle. Research will cover applied chemistry and physics, metallurgy, fuels, ceramics, electronics, theoretical and applied mechanics, the engineering sciences, and agriculture. John S. Crout, for many years assistant director of Battelle, has been named executive director of the new institute.*

## THE CITY SPEAKS OUT

**I**N a note in these columns in May, we welcomed a change of heart in the Council of the Stock Exchange towards the question of publicity for the Exchange's activities. Since that date, concrete evidence has been forthcoming of the new attitude in the appointment of a leading firm of advertising agents as advisers on public relations.

One of the first fruits of this appointment is shown on the cover of this month's BUSINESS, the first colour photograph ever to

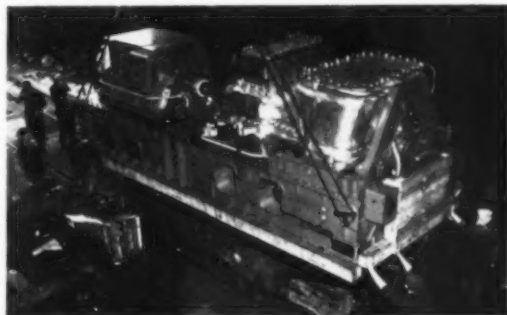
be taken in the precincts of the Exchange. At the same time as he took this historic picture, the BUSINESS photographer also took a series of black and white photographs, some of which appear in the picture story on pages 48 and 49 of this issue.

We believe that this story will be news even to businessmen who have spent much of their time and money buying stocks and shares. The percentage of investors who have actually been inside the Stock Exchange must be extremely small. We believe, too, that familiarity breeds respect, rather than contempt, and that a fuller knowledge of what the Stock Exchange does will do much to counteract a widespread antipathy to "speculators" based on ignorance and misinformation.

In recent weeks, the suggestion has been mooted that some organization should be formed which would speak for the City as a whole. The only thing wrong with this proposal is that it has come ten years too late. But, like many another idea, it is better late than never.

**A**PROPOS our note in the August issue of BUSINESS concerning the British workers' representatives at the I.L.O., we note that the Walton (Liverpool) branch of the Amalgamated

The Shell tanker *Aurix* is the world's first merchant ship to be powered by a gas-turbine. The new engine unit designed by Mr. John Lamb and illustrated here, was recently installed at Hebburn-on-Tyne.



CASHIER

12

REASONS WHY  
YOU SHOULD USE

*Aluminium*  
**ALLOY CASTINGS**

10

**higher  
pay load**

**renfrew foundries ltd**



Union of Building Trade Workers proposed that trade union leaders who were given titles should resign from office. The union's general secretary is Sir Luke Fawcett. The proposal was defeated.

## FUEL FROM DUSTBINS

THE current fuel shortage is spotlighting waste — and methods of avoiding it. According to a Ministry of Fuel "pilot survey," about 1,500 tons of burnable coal are thrown away with ashes into household dustbins for every 100,000 of the population each year. Much of this coal could be recovered, and a few enlightened people are doing so.

Leeds, for instance, has been making briquettes from cinders since 1947. The cleansing department found a ready market in the 1947 fuel crisis for cinders; it already possessed plant for separating them from dead ash, and erected a briquetting plant for about £500. This was soon turning out 20 tons a week—all from ashes thrown away in the city—and now has a capacity of about 50 tons a week. The briquettes are sold at 3s. 3d. a bag, or rather less than the cost of coke, and there is a brisk demand. People even order supplies in the summer.

The Leeds authorities say their plant costs little to run, and that they have had a number of enquiries about it from other municipalities. The Ministry of Fuel suggest that the best method of "recovering" cinders is not to throw them in dustbins. As long as people do so, however, the establishment of municipal briquetting plants may well provide a valuable supply of subsidiary fuel.

FOOTWEAR of the future will be constructed more and more by machines, which will make an ever-decreasing call on human effort. So say American shoe trade engineers, quoted by Mr. H. Bradley, director of the British Boot and Shoe Research Association, who has recently returned from a visit to the U.S.A. and Canada under the auspices of the E.C.A. Fewer operatives will drive larger

OCTOBER, 1951

## SALIENT FIGURES OF THE MONTH

### "BUSINESS" INDICES

	Latest Month	Month Ago	Year Ago
Production (1946=100)	* 143.1	+ 0.6	+ 8.6
Purchasing Power	do. * 110.4	+ 0.2	+ 2.2

### MANPOWER

Total manufacturing industries .. (thousands)	* 2,683	+ 7	+ 281
Cotton spinning and weaving do.	* 332.9	+ 1.4	+ 7.6
Coal (on colliery books) .. do.	701	+ 1	+ 4
Fug. unemployed (U. K.) .. do.	202.7	+ 4.8	+ 67.2

### PRODUCTION

Index of production (1946=100)	* 149	+ 6	+ 7
Coal (average week's output) .. (thousand tons)	3,940	+ 361	+ 22
Steel ingots and castings (do.) .. do.	256	+ 52	+ 20
Cotton yarn (do.) .. (million lb)	* 15.87	+ 0.72	+ 0.15
Woolen wool fabrics (do.) .. (million linear yards)	* 35.73	+ 0.98	+ 2.05
Passenger cars (do.) (thousands)	9.62	+ 0.67	+ 1.24
Commercial vehicles (do.) .. do.	4.89	+ 0.20	+ 0.20
Permanent houses completed .. .. do.	15.97	+ 1.23	+ 1.04

### TRADE

Value of imports (£ millions)	+ 368.5	+ 10.0	+ 153.3
Value of exports .. .. do.	+ 226.2	+ 4.0	+ 26.7
Freight train traffic (million tons)	+ 5.34	+ 0.30	+ 0.02
Retail sales .. .. (1947=100)	150	+ 2	+ 13

### FINANCE

Currency in circulation (£ m.)	1,328	+ 22	+ 51
Deposits in London Clearing Banks .. .. do.	6,174	+ 7	+ 218
Provincial cheque clearings (av. working day) .. do.	7.13	+ 0.16	+ 0.57

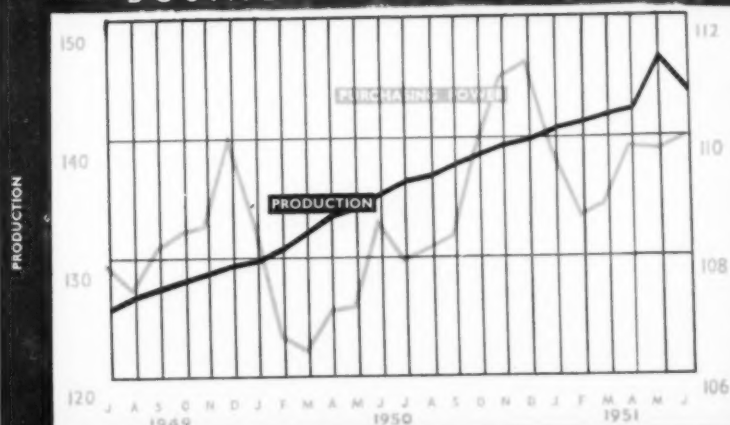
### WAGES AND PRICES

Weekly wage rates (1947=100)	120	+ 1	+ 10
Retail prices (1947=100)	126	+ 1	+ 12
Wholesale prices (1930=100)	+ 322.3	+ 3.4	+ 59.3
Basic materials (1949=100)	+ 178.5	+ 9.1	+ 39.7
Intermediate (1930=100)	+ 371.4	+ 0.5	+ 76.0
Import prices (1950=100)	+ 138	+ 4	+ 38
Export prices (1950=100)	+ 124	+ 2	+ 24

§ Four weeks to July 15, 1951. \* June. † August.

All other figures refer to July.

### "BUSINESS" INDICES (1946=100)





## How to cut absenteeism

The main cause of lost time in industry, according to the Medical Research Council, is sickness absence. Much of this absenteeism can be traced to the transmission of contagious ailments through the use of communal towels.

Roller towels mean waiting and congestion — lost hours — transmission of germs — expensive laundry bills.



Moisture Magnet: Hi-Dri towels absorb every drop of moisture. Will not disintegrate when wet.



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**PAPER TOWELS**

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pay packets for less arduous work, and skill will be diverted from the performance of operations to the accurate preparation of patterns, materials and components for the machines.

## ALICE IN TAX LAND

**L**AST February, the Commissioners of Customs and Excise issued an Order, No. 77D, regarding the incidence of purchase tax on stationery. Like many such orders, it was highly ambiguous, and Mr. T. W. M. Bartholomew, managing director of the Facsimile Letter Printing Co., Ltd., was constrained to write to the Commissioners for further guidance. A protracted correspondence ensued.

Finally, after many months, Mr. Bartholomew got the rulings he required. What he wanted to know was: when are imitation type-written letters (usually processed on letter paper already printed and paid for) regarded as "Stationery" (and therefore subject to purchase tax), and when as "Printed Matter" (and therefore tax free). The position as quoted by Mr. Bartholomew is as follows:

(1) A facsimile letter with a blue-black printed signature can be tax free. If there is a space for signing it by hand, it is taxable. If, however, blank sheets of paper are signed by hand in the correct position, and the letter is printed subsequently, it is tax free.

(2) A name and address can be matched in by typewriter at the head or foot of a fully printed letter, and no tax is chargeable. If however, you match in the personal salutation, "Dear Mr. Jones," you will be charged tax at 33½ per cent. on the printing.

(3) If a printed letter ends,

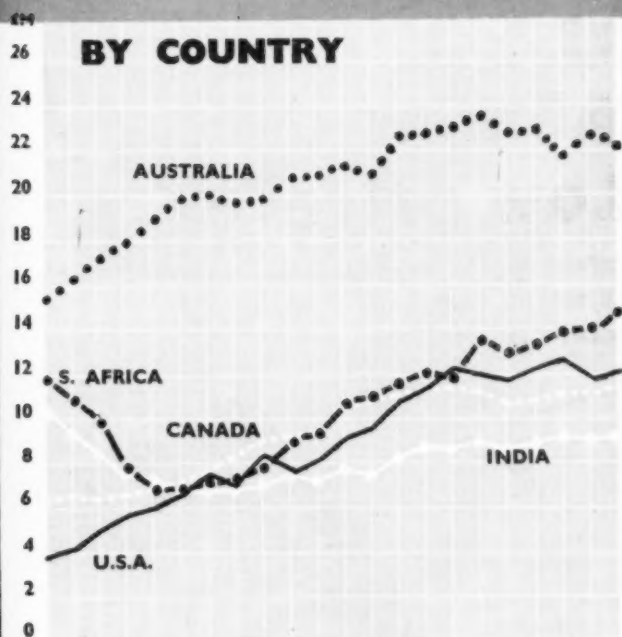
## HOW THE CHART IS CALCULATED

The chart shows, in six months' moving averages, the recent trend in export trade as shown in (top) the main export markets for British goods and (bottom) the main export commodities.

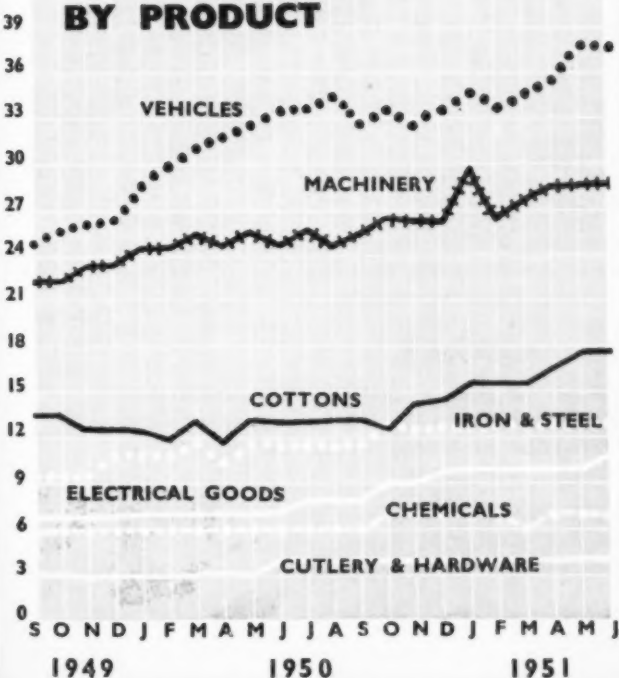
OCTOBER, 1951

## TRENDS IN EXPORTS

### BY COUNTRY



### BY PRODUCT



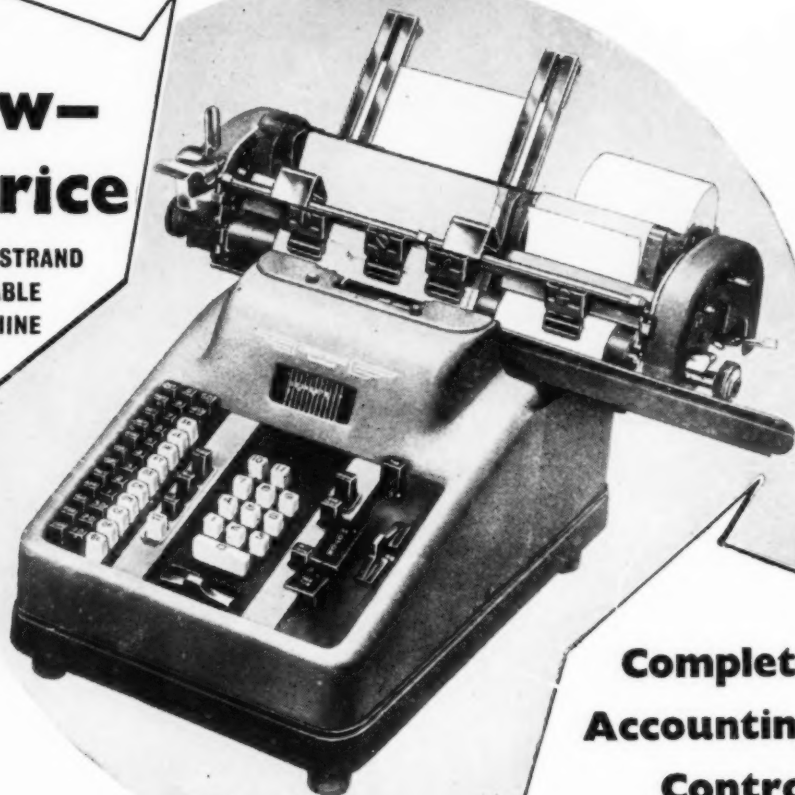


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EFFICIENCY WITH THE

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The most up-to-date aid to efficiency—at an extremely low cost, bringing the benefits of comprehensive mechanised accounting within the reach of all business undertakings.

Ideally suited to handling Sales and Purchase Ledgers, Stores Accounts, Cost Records, Payroll and P.A.Y.E. Records, Public Utility Billing, and other requirements

demanding simultaneous posting to a series of related records, with AUTOMATIC BALANCING AND LINE BY LINE PROOF OF ACCURACY.

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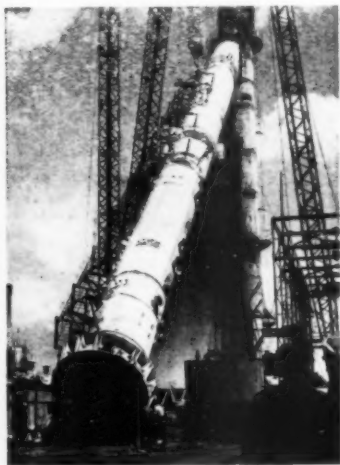


"Yours faithfully," it must start "Dear Sir," similarly, if it starts, "Dear Sir," it must end, "Yours something," or pay tax. It is no good writing a letter without an opening or salutation in the style sometimes used in America and also in the British Forces—tax must be paid just the same.

(4) If a letter heading has any spaces, lines or boxes for "Your Ref," "Our Ref," or date, those spaces must be all used if purchase tax is to be avoided. Honour, however, is satisfied that tax not payable if—not knowing what to put in the "Your Ref," space—one discreet little hyphen is inserted and printed at the same time as the rest of the letter.

(5) Rather surprisingly, unless the letterheading specifically provides a space for the date, a date is not considered as an essential of a fully printed letter.

What worries Mr. Bartholomew is not so much the absurdity and inconsistency of these decisions, but that they have apparently been accepted by the business world with no more than a shrug of the shoulders. "If every one who suffered this tax really did something about it," he says, "the position might well be different. Protests and demands for explanation to



A welded steel absorber column, weighing 240 tons, over 170 ft. long and nearly 19 ft. in diameter, was erected at the Stanlaw (Cheshire) refinery recently. Picture shows the column being raised into the vertical position.

(Shell photograph)

## ICE CREAM BY RADIO

**Latest job of V.H.F. radio is selling ice cream. Vans operating from the Croydon depot of T. Wall & Sons, Ltd., are now radio-controlled within a 15-mile radius of headquarters.**

**Shopkeepers who unexpectedly find their ice cream stocks low can telephone the depot and a van will at once deliver fresh supplies.**



City Gate House, letters to members of Parliament, and the press, protests by trade associations, and also general ridicule of the absurdities on every possible occasion, are the kind of action which will eventually procure a more sensible definition of 'stationery,' or better still, get this purely inflationary taxation withdrawn altogether."

**A** LETTER from a Lancashire colliery in the magazine of the National Coal Board expresses a human need that is in some danger of being forgotten in the administration, not merely of nationalized industries, but in modern management generally. Appealing to mine managers to walk about their pits, the writer says: "Miners take a pride in having amicable personal contacts with their manager. It gives them the feeling of working for somebody."

## U.S. TEAM SURPRISED

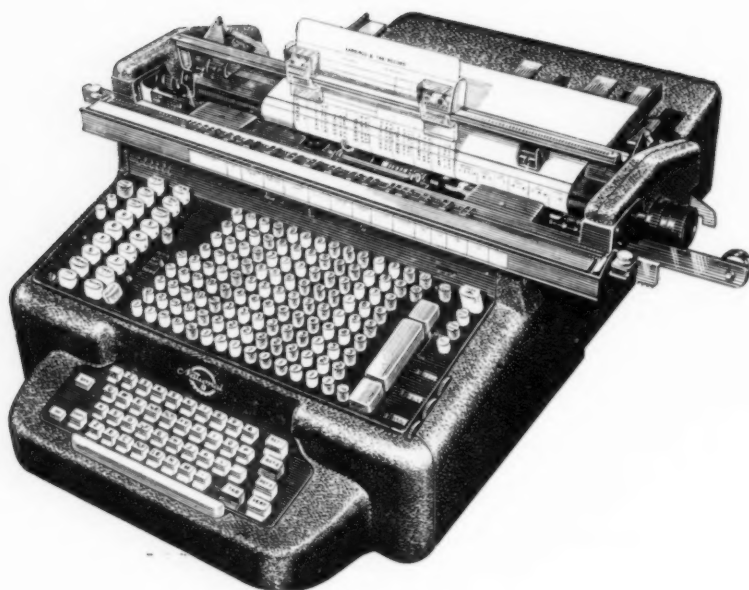
**T**HAT the full value of the work of the Anglo-U.S. Productivity Council would not be felt until American teams had come to Britain, has frequently been stressed in these columns. This opinion is borne out by the re-

actions of the team of American metalworkers who recently returned from a tour of British works. The Council officially stated that "the team has been impressed with the speed and efficiency of British manufacture, which, as a whole, were found to be higher than had been anticipated." In particular, the Americans were "pleasantly surprised" to find management-labour relations on such a cordial plane—well in advance of some in the United States.

They had, of course, various criticisms to make, most of which are already familiar from the reports of British teams. But it is evident that British industry is not really as black as some American commentators have painted it.

The American metalworkers were more enthusiastic than the team of American cotton experts who had visited Lancashire a month before. This is surprising, in view of the statement by Mr. Lincoln Evans, a T.U.C. member of the Council, that the cotton industry has done more to implement the report of its team than any other industry.

BUSINESS has been investigating this statement, and in the November issue will publish the results, showing just how the cotton industry has set about the task of putting precept into practice, and the results it has so far obtained.



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All balances—positive AND negative—computed and printed automatically.

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All-electric typewriter for unlimited narrative description.

Constantly visible printing line gives confidence, aids speed.

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## The Dollar Market is Today's Opportunity



Says PETER HAWLEY

Director, Frederick Tibbenham, Ltd.,  
and Great Names from Great Britain, Inc.

**T**HE dollar gap is widening again, and businessmen are once more being exhorted to export more, particularly to the dollar area. BUSINESS, believing that an ounce of practical experience is worth a ton of exhortation, went to a man who knows the North American market intimately, and has sold in it successfully for many years, to find out what the prospects are in the changed conditions caused by the war in Korea and rearmament.

Peter Hawley is director of Frederick Tibbenham, Ltd., of Ipswich and London, manufacturers of fine quality reproduction furniture—a business that was exporting to Canada and the United States long before the dollar gap made the headlines. He is also a sponsor of "Great Names from Great Britain," Inc., a group formed by six leading British manufacturers of household furnishings that has run one of the most successful collective selling campaigns in the United States for many years.

Here are the questions that BUSINESS asked him, and here are his answers.

**1.** ARE exports more, or less, necessary for the individual British manufacturer than they were, say, a year ago?

**"M**ORE necessary. The impending scarcity of raw materials,

which has so far scarcely been felt in this country, except in the case of steel and alloy metals, indicates that a cut in production of certain consumer goods is most likely. Government spokesmen have repeatedly stressed that exports are just as important as rearmament, and will be given equal priority if and when the rationing of raw materials becomes necessary. Thus the production of a manufacturer who has concentrated on the home market may be curtailed to a greater extent than that of his colleague who has developed an export business. The manufacturer who wants to maintain his turnover in the immediate future will have to look abroad; self-protection, as well as patriotism, demands his concentration on the export market."

To export to North America is a national necessity. But it is also a potential source of profit to the individual businessman. Like all markets, America makes its own demands, and these though exacting, can be met by any manufacturer with a saleable product. Here, BUSINESS publishes, in an exclusive interview, the views of a man who has been doing it successfully for years.

**2.** ARE export markets—particularly in the United States and Canada—easier or more difficult to penetrate than before Korea?

**"I** HAVE been in the United States since the outbreak of hostilities in Korea. My experience is that, at any rate so far, these have had little long-term effect on the market for consumer goods. Tibbenham's have been exporting to the United States for many years, and our order book is in a healthy condition. Firms in other industries may not be quite so happy, but I believe that this is a purely temporary phase. What has happened is that in the early months of 1951 retailers and consumers alike indulged in buying beyond their normal needs in anticipation of scarcities and price increases, neither of which fully materialised.

"As a result, many retailers are suffering from 'stock indigestion.' But these stocks are mostly good, clean saleable stuff, which should be absorbed by the public in a comparatively short time. When this has taken place, demand for all goods, American and British alike, should rise again.

"Prices are not likely to come down. Manufacturing costs are rising in America just as much as in Britain, and the effect of the defence programme there has not yet been fully felt. When it is,

## The U.S.A.—an Expanding Market

- ▶ More than 60,000,000 people employed—over 2,500,000 more than a year ago.
- ▶ Of 17,000,000 women working in industry, 9,000,000 are married.
- ▶ National income in 1951 expected to set a new record—now running 30 per cent. above 1950 levels.
- ▶ Compared with 1940, national income may rise by \$47,200,000,000—even after correction for price changes.
- ▶ U.S. export surplus dropped from 5 per cent. of gross national product in 1947 to 0.6 per cent. in 1951—rearmament will mean fewer home-produced goods on the market.

consumer spending power will rise, while the consumer goods on the market from domestic suppliers will diminish. Here is a golden opportunity for the British exporter—if he can maintain production and meet the demand."

### 3. ARE tariffs, customs regulations and other hindrances to British exports easing?

"THERE has been a definite easing recently in customs clearances. Customs regulations are a necessity, if nothing more. But provided that one keeps strictly to the rules, no difficulty should arise."

### 4. WHAT has been the initial effect of rearmament in this country and in America on export trade, and what further effects do you anticipate?

"SO far we at Tibbenham's have not been affected at all by rearmament. But we use very little metal, and I gather from colleagues in other industries that we must count ourselves lucky. Whether, and how rapidly, these shortages will spread depends on the pace at which the rearmament programme gets under way. That, in turn, depends on international developments that none of us can forecast. One thing is certain: if American influence has any effect it will get under way much more rapidly than at present seems likely."

"I can only offer two consolations.

The manufacturer working for export will be better off than his fellow concentrating on the home market. And the shortages that hamstringing his production efforts at home will ease his selling problems abroad."

### 5. What is the best way for a British firm that has not so far tackled the North American market to try and break into it?

"THE fundamental principle in catering for the North American market is to find out first what the market demands—and then go all out to make it and sell it. This may sound a truism, but it is one that many aspiring businessmen ignore. Don't, for heaven's sake, assume that because your product has sold well on the home market, or even in other countries, that it is necessarily going to sell in America. It may do—but the chances are against it."

"There are too many differences to take into account—differences in customers' tastes, differences in climate, differences in merchandizing methods. The only thing to do is to go out and see what you are up against in the way of competition—find out the type of product within your range that is actually selling, and then adapt your own product to meet these requirements."

"Tibbenham's have built up a unique position in the American

market. We have no direct competition—though we have, of course, to meet all sorts of indirect competition for the consumer dollar."

"Market research must take into account not merely consumer preferences, but also the actual performance of the product."

"The best way to do market research is so far as possible to do it yourself. I strongly recommend any manufacturer intent on breaking into the American market to go over there himself, for as long as he can spare the time and money, to talk to agents, department store managers, advertising experts and so on. There are plenty of people who will help you—the amount of time that the American businessman will devote to someone who wants to sell him something is amazing. On a different plane, most American advertising agencies maintain a market research department, and if you can find one that has had experience in your own field, you will find it extremely useful."

"All this preliminary research, of course, costs time and money. But experience has shown that it is cheaper to spend money in the initial stages and get the product right rather than rush in blindfold and have to modify it later."

### 6. HOW can a manufacturer already selling a small quantity of goods through agents expand his market in these territories?

"IF your product is not selling well in America, there are only two alternatives: either the product is wrong or the agents are wrong. If the product is wrong, the only thing to do is to find out what is wrong with it and then re-design it—which brings us back to the need for continuing market research."

"You may need more agents. Too many firms leave their sole representation in the hands of a New York firm that cannot adequately handle business in, say, St. Louis or San Francisco. We at Tibbenham's have our own representatives in Chicago, Boston, Philadelphia, Los Angeles and

other centres operating as part of our New York organization.

"Alternatively, you may have agents who are already handling too many different lines.

"Commission, too, must be adequate, but conditions vary so widely from industry to industry and from one area to another that no safe generalization can be made. There is, however, one point that all exporters should keep in mind. America is a vast country, and a sales representative may travel 3,500 miles a month against the 350 which his British counterpart would cover. Travel in America is expensive, so that a substantial proportion of what may seem an exorbitant commission really represents *bona fide* out-of-pocket expenses."

## 7. DOES collective selling pay?

**T**HERE is no doubt whatever in my mind that collective selling pays. We have proved it in the 'Great Names from Great Britain' campaign.

"The history of 'Great Names from Great Britain' goes back to 1950, when six firms, leaders in their respective fields, joined hands to form a co-ordinated sales grouping of British-made home furnishings. Tibbenham's contributed reproduction furniture, Arthur H. Lee & Sons, Ltd., furnishing fabrics, Josiah Wedgwood & Sons, Ltd., chinaware, James Powell & Sons (Whitefriars), Ltd., table glassware, the Irish Linen Guild, Ltd., table linen and I. Freeman & Sons, Ltd., cutlery and silverware.

"All of us were already well established, as individual firms, in the American market. All of us had our own agents and our own New York showrooms. But we felt that, by joint action, we could still further increase our sales. A company was registered, and we went into action. We approached department stores in all the big cities, offering them a joint exhibition in the form of the 'Princess Room,' a completely furnished display. In most cases, we got a central display position for a fort-

*Continued on page 109*



Above: the "Princess" room, furnished jointly by the six member firms of "Great Names from Great Britain." Princess Elizabeth gave permission for the use of her portrait in this room, which has been exhibited in department stores throughout Canada and the U.S.A.

Right: a close-up of a table in the "Princess" Room.

Below: Queen Mary inspects the replica of the Coronation Chair—complete with the Stone of Scone—which Tibbenham's flew to Canada and the U.S.A. for exhibition purposes.





# This New Management Set-up Breaks Sales Records

By BRIAN CUMMINGS

**S**OME 18 months ago, Mr. Roland Dunkerley, chairman of Vantona Textiles, Ltd., told his shareholders: "The changed conditions of production and marketing to-day compared with those obtaining prior to, and during, the war, have naturally caused a complete revision of our selling technique. The necessity for even closer working between our factories and our selling organization is realized and has been keyed up through the introduction of budgetary control methods, the training and redeployment of labour and methods of machinery utilization."

In the year which Mr. Dunkerley was reviewing, the turnover of the company was 700 per cent. of the figures achieved before the war; and although this percentage was calculated in terms of value, the increase in volume was also very large. Since that date Vantona Textiles have increased their export trade by another large percentage; and as the months go by they hope to make still further improvements.

When Mr. Dunkerley addressed his shareholders, he was thinking backward as well as forward. Obviously, one does not see the need for change in a blinding flash of inspiration. Nor are such changes made overnight. The revision of Vantona's selling technique to which Mr. Dunkerley referred has been a gradual process. The very history of the company speaks of steady and logical development. In the 1920's it still consisted of a number of old-established family businesses, whose common interest was making woven cotton goods to

cover beds. In 1930 the families combined to form Quilt Manufacturers, Ltd., to allow each mill or factory to concentrate on one type of product. The combined companies continued to trade under their own names until 1935, when it was decided to turn the organization into one coherent body.

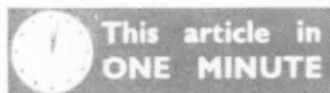
Mr. Dunkerley was recruited from the steel industry, and the unification was achieved in 1936. Vantona Textiles is now a complete vertical organization with 2,000 employees engaged in spinning, weaving, bleaching, dyeing, making up, warehousing, packing and marketing. They have their own research laboratories, design

department and cloth construction department. And they have had a work study department since 1936.

Since Vantona Textiles do everything from spinning the yarn to supplying made-up goods ready for use, their organizational problems fall into three groups: production, sales and finance. The products themselves are grouped into five departments: 1, bed covers; 2, towels; 3, blankets; 4, down quilts and bedspreads to match; 5, ticks and tickings.

Most Vantona exports are sold in the Commonwealth markets—Canada, South Africa, Australia and New Zealand. The company also do business with some 48 other countries all over the world, including Denmark, France, Norway, China, India, Pakistan and South America.

Non-branded lines are sold to all classes of customer; but most of the branded goods are aimed at the higher income group markets. Bed covers may sell at anything from £4 to £15; towels range from utility lines to luxury products at £5 each. Branded lines include *Vantona Court*, *Rustic*, *Homestead* and *Gibraltar* bed covers; *Decor*, *Joyous Morn* and *Nocturne* towels; and the *Waffle* bath mat and *Blansheets*. All these products are packed in *Cellophane* with distinctive paper bands and large tickets bearing the design number, size (in inches and centimetres) and washing instructions. Incidentally, the company pride themselves on the fact that even their cheapest products, such as two-pick and condenser towels, are colourful.



**Vantona Textiles, Ltd., have five groups of products and several hundred line items. Careful anticipation of demand and perfect co-ordination of production and selling are therefore essential for success in home and export markets. This has been achieved by dividing the management of the company into production and selling groups. The sales group is further divided into a series of product groups, coinciding with the five main classes of product. These product groups consist of people responsible for both production and selling. It is the job of the chairman to reconcile the various interests and ensure that no side dominates or obstructs another.**





A product group in action at Vantona House in Manchester. This one is dealing with towels.

The operational side of the company is run by the managing director, Mr. Wallace N. Ormrod, and five key men: the secretary (who looks after finance); the production manager (production performance); the production development officer (production development); the sales manager (sales performance); and the marketing manager (sales development and planning). With the exception of the marketing manager all these men are directors of the company. The only member of the management who does not give his whole time to the business is the chairman—and Mr. Dunkerley, who has ceased to be an executive officer of the company, was himself, until recently, the full-time managing director.

Each of the divisions, production, sales and finance, is always examined from two points of view: performance and development. In a business which depends for its success on the rapid production of a large number of new and successful designs each year, the production and sales sides of the organization must work in very close collaboration. This collaboration must be brought about in such a way that neither side dominates or obstructs the other. The way in which this is done at Vantona Textiles is unusual, and specially interesting to those outside the textile industry.

The management is divided into two sections: a production group and a sales group. The production group consists of the production manager (in the chair), the pro-

duction development officer, the personnel manager and the managing director. This group meets once a week. The sales group, which is also responsible for the general commercial organization of the company, consists of the sales manager (in the chair), the marketing manager, the managing director and another director who is also the manager of the bed cover department. On both production and sales groups, the finance manager attends as a full member. This group meets once a fortnight, and in its turn is divided into a series of product groups coinciding with the five main lines sold by Vantona Textiles—i.e., bed covers, towels, blankets, down quilts, ticks and tickings.

The product groups consist of equal numbers of people respon-

sible for production, design, cloth construction, research, and selling, with the marketing manager in the chair. They meet at frequent intervals throughout the year and their job is to see that the right goods are produced in the right quantities at the right time. In consultation with the export and (British) area offices, they are also largely responsible for sales forecasting. The chairman's function is to reconcile the views of the various sides who will naturally tend to argue for ease of their individual departmental responsibility. The success with which this has been done is evident from the figures already quoted.

Actual sales are handled by the export department and area offices in Great Britain, all of which are controlled by the sales manager. The export department consists of a manager and a number of assistants, each of whom is responsible for a group of markets. These assistants deal with documentation and correspondence with the agents. There are about 40 agents, a number of whom have considerable selling organizations of their own.

In this country Vantona deal with wholesalers only; abroad they sell their goods to retailers and wholesalers—varying their practice in accordance with the situation within the country con-



The large booklet is for stores; the smaller one for customers.



A typical broadsheet for distribution to stores. This one ties up with a towel campaign in South Africa and gives details of Vantona advertising.

cerned. Incidentally, most of the agents also handle goods which are complementary to, but not competitive with, Vantona products.

Although budgetary control methods are applied to all sides of the business, including production, selling, and finance, the amount of market research undertaken for the company by outside organizations is quite small. To quote Mr. Wallace N. Ormrod: "Lancashire is said to be old-fashioned, but the truth is that Lancashire has been doing market research for the last 150 years—only it has not been called that."

Mr. Ormrod points out that for three or four generations it has been customary for merchants selling the products of Lancashire's cotton manufacturers to send their salesmen on prolonged tours of export markets. Some of these men spent as long as two years in the field, sending back long and detailed reports describing how samples were being received and suggesting ways in which the goods could be improved to meet the needs of particular customers. Vantona Textiles themselves—or the firms which made up the new organization—have had their own representatives travelling in foreign markets for decades. Vantona has carried on this tradition. Last year the chairman himself undertook a tour and in January of this

year a new range of products was introduced as a direct result of his journey.

"Most of our markets are traditional markets and we know them well," says Mr. Ormrod. "Our export manager has never been to Australia but he has been dealing with the Australian side of the business for 30 years and he knows it so well that he can estimate the potentialities of a store just as well as if he had been there and seen its books. From our point of view, the usefulness of the professional researcher is generally limited to those facts and figures which are generally available, but which he can thread

together better than we can. Almost everything else depends on our own imagination and on our ability to make the best use of our own organization."

The Board of Trade and the banks provide general economic information, but this does little more than indicate where the interest of the company ought to turn. The kind of information which is at once more intimate, more vital and more immediately applicable comes from Vantona agents and Vantona head office executives following their tours abroad. In 1949-50 for example, the marketing manager, Mr. Dennis Hayes, made a tour of Canada and the United States, the result of which was a detailed report on both these markets.

Under the heading of "Market Information" he gave details of climate, population, purchasing power, occupations and trends in the purchase of consumer goods. He described the prospects for business generally and gave details of capital investment, employment and re-equipment. Market developments, such as the discovery of oil in Alberta and iron ore in Labrador, completed this side of the report.

General information was fol-



Point of sale advertising material for two of Vantona's leading products.

lowed by a detailed examination of the performance of Vantona products in these markets. Vantona products were compared with others in the same line of business; then they were held up against a background picture of Canadian and American tastes in these goods. As a result of these recommendations, changes were made in the colours and weights of bed covers and towels. The report also brought in confidential observations about the selling and advertising agents and the methods which they employed.

About two such reports are produced every year, generally by senior men. In the case of a tour by a junior executive (for example, one of the assistants in the export department) a very careful brief is provided by the export manager, the sales manager and the marketing manager. This ensures that the right kind of information is produced.

### ***Agents' Reports***

Remaining information about the markets comes from the agents themselves, who report in detail whenever they think there is something important to say. This year there have been four major reports: one from Canada, one from New Zealand and two from Australia. Allowance was made for temperament in studying what they had to say. Very occasionally snap surveys are taken by professional research men in order to complete a picture which is wanted in a hurry.

Because of the nature of the trade, a special responsibility rests on the marketing side of the business. This is seen in the fact that they lead and co-ordinate the work of the product groups. More than that, they have a very direct influence on press advertising and on other weapons of selling such as broadsheets, booklets, pattern books, the house journal and the sales and show rooms in Manchester, Birmingham, Glasgow and London.

Most advertisements, booklets,



The sales room at Vantona House was designed and constructed by the company's own staff.

broadsheets, etc., are the work of yet another managerial unit—the publicity group. This meets once a month under the chairmanship of the marketing manager and consists of the sales manager, the manager of the product department whose products are under review, the publicity manager, and representatives of the advertising agents. Ideas are thrashed out and roughs produced at Vantona House itself, and after a series of recommendations by the agents to the group and the group to the board and back again, a plan is finalized which meets the needs of particular products and particular markets and yet fits in with overall strategy. Some idea of the importance of this group may be obtained from the fact that Vantona Textiles have seven campaigns in preparation or operation at the present time.

Some of their work in the shape of showcards, broadsheets, booklets and photographs for advertising purposes is shown in the illustrations. However, these could hardly do justice to the quality of production. The broadsheet shown on page 46 ties up with a towel campaign in South Africa. The inside includes not only the usual attractive photographs, but tabulated details of newspaper and magazine advertisements with the dates of their appearance in each medium.

The booklet on page 45 ties up

with a bed cover campaign in Australia. Inside there is an easy-reference tabulation of advertisements which the retailer is asked to pin up in his office. The booklet itself also covers display dealer aids and, of course, includes detailed descriptions of the products. Reference is also made to a third booklet (shown on page 45) which is designed for distribution to the customers themselves. This includes very attractive full colour photographs showing bed covers in appropriate settings.

Mr. Ormrod came very near to summarizing the progress made by Vantona Textiles, Ltd., in the past few years when he said: "In the bad old days, factories worked while the orders came in and stopped when they didn't. That was all right when there was plenty of labour. Nowadays the only way you can get operatives is to offer really good and regular wages. That means you must have sufficient confidence in your sales forecast to make the goods before they are actually sold."

"Given accurate forecasting, it is possible for us to order materials well in advance of the time when they will be needed and so plan right back to spinning and dyeing in order that all the machinery and equipment is used to the best advantage. This is achieved in part by the group meetings already described and, in the round, by budgetary control."



Left: The Stock Exchange is the market place of the nation for the exchange and valuing of nearly £30,000,000,000 worth of stocks and shares, approximately half of which are British Government securities. At least two to three million investors use this market. Membership of the London Stock Exchange is approximately 3,850; of the Associated Stock Exchanges 1,000; and of the Provincial Brokers' Exchange 340.

The picture shows the entrance to the House in Capel Court. Immediately behind this doorway is the Gilt Edged market in Government Securities.

Above: An everyday scene in the library. Brokers and jobbers scrutinize the daily lists of the movement of prices in exchanges all over the world. This library is a part of the vast system of providing news to and from the financial centres of the world. Information in these bulletins from other exchanges is compiled during the course of each day's business.

## Inside the S

Below: Here are a broker and jobber engaged in making a bargain. The broker represents the investing public who want to buy or sell stocks and shares. Jobbers are principals trading on their own account; they have no dealings with the public, and are allowed to deal only with other members of the Stock Exchange. While they may deal in anything they usually handle one group of stocks only.

Below: When a bargain is made, sometimes involving large sums of money, it is done by word of mouth. When agreement has been reached, broker and jobber record the transaction in their note-books. The final paper work involved is worked out between the clerks of both on Settling Day.

A typical scene in the settling room under the floor of the House when the clerks of brokers and jobbers meet to complete records of the transactions of their principals the day before.







Above: Members (Brokers and Jobbers) study the movement of prices in gilt edged securities. During the business day, when a bargain is completed between a broker and jobber, the price is marked up on these boards and is recorded simultaneously in the Daily Official List which is published by the Stock Exchange the following morning.

Right: When the Stock Exchange first came into being in the late 17th Century, brokers and jobbers met in Jonathan's Cafe. Messages were passed between brokers and jobbers by waiters. Today, the Stock Exchange retains its old traditions and one of them is the waiter, who is seen in this picture standing in his cubicle, surrounded by switches and speaking tubes. There are many waiters in the House, and their job is to convey messages between brokers and jobbers and to deal with all kinds of queries from their offices. On a busy day, the waiter deals with hundreds of messages.



Below: Communications are vital in the daily business of the Stock Exchange. The Exchange Telegraph has a complicated system of communications installed in the exchange (left) for the use of members, to convey up-to-the-minute news of activities to the four corners of the world, within a few minutes of their taking place. Our picture shows a switchboard receptionist taking down a telephoned piece of information.

In Shorter's Court, off Throgmorton Street, (right) are other information services. The man standing on the step is reading to a clerk inside, the latest movements of prices in certain markets which their clients are interested in.

Below: The Council of the Stock Exchange in session in the grand Council Chamber at Throgmorton Street. This Council meets every Monday and is composed of brokers and jobbers. In the words of the chairman of the Council, Mr. John B. Braithwaite, "In 1900 the Stock Exchange was still, in its conception and mentality, a private business club, whereas today it is . . . a public institution".





# Piecework is His Policy— Productivity His Target

By A. K. ASTBURY



THE last decade has seen a remarkable increase in the number of firms who pay their workers by results. This has been partly due to conviction, partly to outside pressure in the campaign for higher productivity.

Some of these schemes have failed, some have brought little change, some succeeded. The only safe generalization that can be made is that the mere introduction of a bonus scheme will not necessarily bring about higher output. It is necessary to examine individual successes in detail to find out just what factors have determined their success.

Some nine years ago Mr. R. W. Mann, managing director of Victor Products (Wallsend) Ltd., a medium-sized engineering company on Tyneside, started introducing piecework. To-day, all workers are on piecework. In the meantime, output has increased by 60 to 70 per cent., and is still rising rapidly; Mann talks in terms of an eventual increase of 100, 200 or even 300 per cent. There can be little doubt that this scheme is a success.

Technically speaking, there is nothing particularly revolutionary about the Victor Products scheme. Most of the work covered consists

of job-produced mining equipment. Each job is time-studied, and a standard time set; bonus is calculated on the basis of time saved by the operator. Similar schemes are in operation all over the country, but by no means all of them are showing the results that Mann has obtained.

Perhaps the primary factor in Mann's success is his intensive belief in the merits of payment by results as an incentive.

"Fear as an incentive has a number of supporters," he says. "In engineering language, in Birmingham anyway, it's known as 'horsing' a shop. I've been horsed and I in turn have done the horsing; but in my experience, although it can for a time increase output by up to 10 per cent., it is the most unremunerative return for effort I

know of. It can only lead in the long run to progressively deteriorating relations between management and men.

"Increased wages due to overtime and Sunday working are another incentive. I believe it increases production for a very short period and is of serious use only in an emergency. It worked for a time after Dunkirk; its long term results were disastrous.

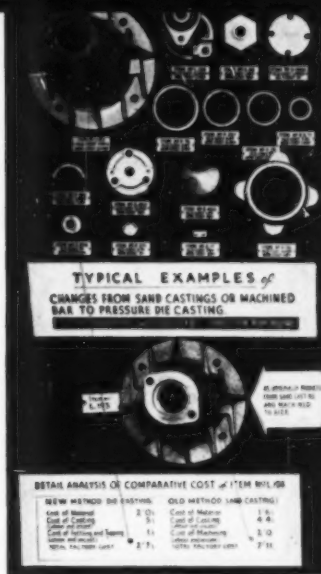
"Yet another incentive is the payment of collective bonus; but in my experience this only means paying higher wages for the same work. Production may increase for a time; but when it is realised that the odd slacker is as well off as the hardest worker, output usually begins to drop to its old level. And a collective bonus scheme, easy enough to start, is not so easy to stop.

"In my opinion the only incentive worth while is piecework—payment by results, where each individual worker gets paid directly in accordance with what he produces. And I have yet to find the case where in the engineering industry, by breaking down, piecework in one form or another cannot be arranged. If such a scheme were adopted in industry generally it would once more put Britain at

Piecework can raise output and lower costs—but it needs careful handling. R. W. Mann, managing director of Victor Products (Wallsend) Ltd., has shown how, by making a bargain with workers and keeping to it honestly, production per man hour can be increased. But there is more to piecework than the mere application of a stop-watch—the human element is paramount.

## WORKING for VICTOR PRODUCTS

Workers want to know the why's and wherefore's. A brochure gives the newcomer all the information he wants, and dynamic displays drive home in concrete terms the need for cost analysis.



## TYPICAL EXAMPLE INCREASE IN PRODUCTIVITY BY COST ANALYSIS

### JOB CARD

AS NOW  
PRODUCED

1. MATERIAL 2" Ø  
LABOUR AND UNDOCT 18.75  
17.75 FACTORY COST
2. ANALYSIS AND RELIEF OF TOLERANCES  
MATERIAL 2" Ø  
LABOUR AND UNDOCT 12.75  
12.75 FACTORY COST
3. BLANK FROM FORGING INSTEAD OF BAR  
MATERIAL 2" Ø  
LABOUR AND UNDOCT 10.75  
10.75 FACTORY COST
4. INTRODUCTION OF NEW HIGH SPEED MACHINES  
AND LARGER TOOLING  
MATERIAL 2" Ø  
LABOUR AND UNDOCT 7.75  
7.75 FACTORY COST

INCREASE OF PRODUCTIVITY  
(CALCULATED FOR MAN/UNIT EMPLOYED)

48%

the head of the world's producers—America not excepted."

The second factor in Mann's success has been his realization that piecework—like all management methods—cannot be imposed, but must be "sold" to the workers. This means, too, that the system must be a fair one at its inception, and that it must be administered fairly throughout its course.

"Honesty, honesty, all the time, and the mutual trust which is built on it; these are the foundations of any piecework scheme," he says. "Labour has had too much experience of the unfair application of piecework in the past; if it is to be willingly accepted, then there must be no attempt whatever for one side to try and get the better of the other. Trust may have to be built up. But if the management of any factory concludes its consideration of a piecework problem with the question, 'Is this scheme fair?' then it is well on the way to creating that trust.

"When I tried to introduce piecework here my men refused to have anything to do with it at first—they'd been put off by previous experiences. So I told them that while they could continue to work on 'time,' a sort of shadow piecework scheme would operate; they would be paid 'time' wages but their potential piecework earnings

would be marked on their pay slips as well, in red.

"When the men saw there was a difference between earnings (in red) and pay (in black) and that the red figures were higher, they just assumed it was all part of the catch; but after a while one of them asked if he could be paid according to the red figures; piecework had begun, and soon the whole shop followed his example. And to-day there is not a single productive operation not carried out by piecework."

### How it Works

Every new employee who comes to Victor Products receives a booklet which explains, among much else, how the piecework "bargain" works. It points out that piecework prices are based on the time allowed for each article (since the fixing of time, rather than prices, simplifies costing) and are such that an average worker can earn time and a half, a good worker double time, and the expert even more. Any man who cannot earn time and a half is considered below the standard required by the company.

Bonus is assessed simply on time taken to do a certain job, and where that time is in dispute a decision is reached in novel fashion.

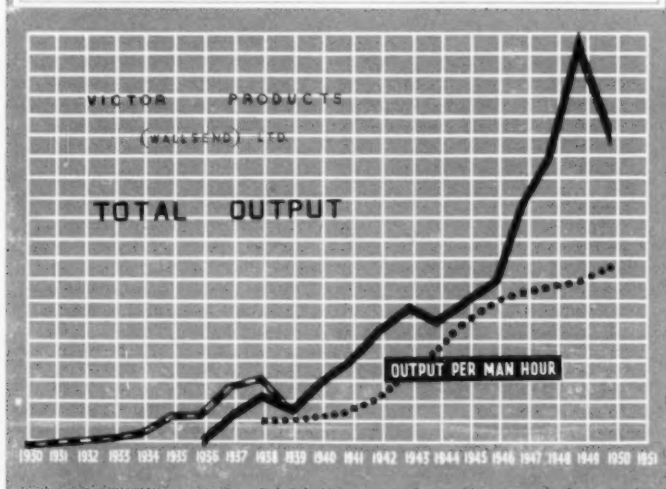
Everything is prepared at the bench so that a nominee of the management who is to do the job—usually the foreman—may start the operation on the word go, with all tools to hand, and so on. The workman whose job it is holds the stopwatch and times the foreman; two and a half times the foreman's time, as recorded by the workman, is then the agreed time allowed for the job. This, in practice, usually works out at time and a half for the average worker.

"This," Mann says, "is the crux of the whole piecework system. It avoids price bargaining, for the workman must obviously be satisfied with twice the boss's time. Nor on the other hand is it over-generous; the nominee is usually practised in the operation; very rarely in workshop practice (as in the test) is all the equipment ready to hand when wanted; and no man can ever work continuously right through every job and through every day."

These then are the fundamentals of Mann's incentive scheme. But the scheme has more to it than that. Bonus is always paid at the end of the week; if the job takes longer than a week, 75 per cent, of the bonus which would have been paid had all articles passed inspection, is paid instead, and the payments adjusted on completion of

## Eight Points on Piecework

1. Sell piecework hard to the men on the shop floor; if necessary put in a "shadow" scheme side by side with the existing wages system.
2. Set your standards fairly—and keep to them. Settle disputes by letting the worker time the supervisor on the job.
3. Encourage complaints; they pin-point inefficiencies and pave the way to higher productivity.
4. Give chargehands power to modify jobs on shop floor level.
5. Make the inspection department independent of the works manager to allow him to hold a fair balance.
6. Pay bonus promptly. If necessary pay an advance bonus on long-term jobs.
7. Use your bonus figures to establish accurate costs. Use these in turn to control works policy.
8. Plan research and development well ahead. This ensures a contribution to higher productivity.



the job. And every pay slip always shows quite clearly how much bonus has been earned on each separate job. "Hope deferred (it is Mann's comment) kills enthusiasm."

"Another essential factor in the smooth working of the scheme," he points out, "is that the inspection department should be fair to both worker and management. It's not much use if the works manager controls both machine shop and inspectors—he's kicking himself around continually when that's the case. So our inspectors are independent of the works manager and responsible immediately to the directors. In addition inspection records are kept showing precisely why a certain product may have been rejected, and the workman is of course free to consult these records."

So much for the workers' side. Management, too, has its own contribution to the successful working of the scheme, much of it at managerial level, but a good deal in the shop itself.

Under many piecework systems the worker who, for example, finds difficulty in assembling two parts, may be told to take the good with the bad and get on with the job. That, Mann feels, is fundamentally wrong. "I cannot exaggerate the results which can be obtained by the consistent and automatic consideration of a continuous series of small difficulties, any one of which may by itself be almost too insignificant for notice. Four unnecessary strokes of a file by a fitter multiplied by some thousands of articles a year can mean real money in loss of output."

And so the worker is encouraged to object to difficulties which are technically outside his piecework bargain. Foremen or chargehands have an order book with serialized pages so that they can on their own initiative give the workman an order covering additional work resulting from the complaint with a detailed reason for the need for such work. "By the mere passing on of these orders to the management for approval of cost allocation

tion we become aware for the first time that something is capable of improvement; and the man on the job is thus enabled to help the company while helping himself."

But it is at purely managerial levels that management can make its greatest contribution. Any piecework system, Mann believes, can be only 25 per cent. effective unless accompanied by proper costing. "As far as I am concerned costing is useless for fixing the selling price of our products—that's fixed by supply and demand; costing provides against a given selling price, the data necessary to make the components at the lowest possible price for a given quality—that is, to reduce the labour costs for each item; which in turn is equivalent to increasing man hour output; which is again the function of bonus incentives."

But it must be adequate costing. To provide (as is customary in some companies) four prices for the cost of four identical jobs—7s. 6d., 7s. 6d., 7s. 6d. and 9s.—and not explain that in the first an expert workman earning double time did the job in 30 minutes; in the second an average workman took 48 minutes, 12 of them on bonus; in the third a poorer workman took 60 minutes on basic rate, and in the fourth the material was scrapped half-way through—that is no good to Mr. Mann since it provides no comparative information on increases in output per man hour.

But if (as Mann explains) for the purpose of shop costing bonus, overtime, nightwork, premiums, scrap and so on are treated as "on cost," shop costing and analysis then become related to production wages only. It is possible then to fill in, on cost analysis sheets, the production costs of any job. And in the case of Victor Products a summary of the total monthly production from these sheets is provided for the management each month and by their use Mann is able, month by month, to keep his finger on the pulse of bonus, overtime, scrap and rectification, input and output; and indeed every essential form of managerial re-



At Victor Products the worker is encouraged to object to difficulties which are technically outside his piecework bargain. This helps both management and men.

mate control can be exercised through them.

The production of each article, too, however involved, is also measured in terms of "works units"—£1 worth of cost-allowed values. The total works units which are therefore involved in the production of any one article, form a yardstick by which all the operations of the factory may also be measured.

Side by side with the operation of incentive bonus schemes and the initiating, and recording, of developments in organization and practice, there goes on at Victor Products that technical research and development without which the company's phenomenal progress could not have been possible.

Such research and development projects are incorporated by Mann in what he calls a Five Year Plan. "From our contacts with research organizations all over the world, we find out the latest developments which could affect our industry, go through them one by one, and decide how many of our existing products can be turned over to such new production methods. We work on five year periods, so that in five years we have absorbed a complete new technical programme.

"If it's a machine, we introduce prototype plant and make sure we have the 'know how.' Then during the next five years we go through every single product we make and see how much can be turned over to the new method—

costing, of course, being the decisive factor. And during that five year period we are experimenting with developments to be introduced into the next five year plan. We've already gone over from sand casting to die-casting for zinc; the next step is to use it for aluminium and brass. If we're successful, that will be our next five year plan and it should, I imagine, increase our productivity by some 17 per cent.

"Thus by cost analysis and our five year development plans we keep production increasing each year, and have done so for the last 14 years. Fourteen years ago it took a man earning £4 18s. a week 16½ hours to assemble a complete mining drill. Now the same man assembles it in 2½ hours and makes from £12 to £16 a week."

The honesty and frankness which Mr. Mann regards as essential to the operation of a piecework scheme are in themselves also an essential part of his own make-up. In the works magazine, for example, he talks to his employees with complete frankness on company policy. On the company's prospects in one number he writes, "We must get orders equivalent to 3,000 works units a month. The total input for the last two months was 300 units short. The shortage is expected to be made up at an early date by increased sales of our new hammer drill, our new designs of power-fed drills, our ultimate entry into the drill steel market and an increase in exports."

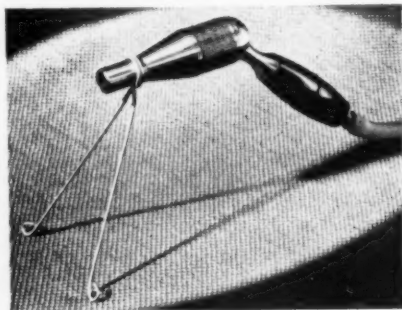


# Look Out for WHAT'S NEW



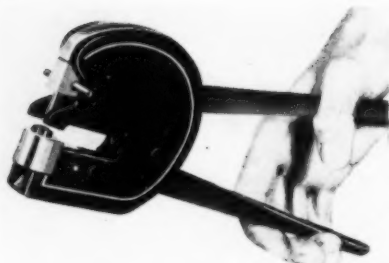
## FEATHERWEIGHT EARPHONE

**W**EIGHING only one-third of an ounce, the *Bonochord* miniature earphone was originally designed for use with hearing aids. Despite its small size it has good sensitivity and a wide frequency range. It can therefore be used for many other applications such as recording and dictating machines, personal radio sets, intercommunication, etc. Comparison with a penny reveals the minute size of the earphone.



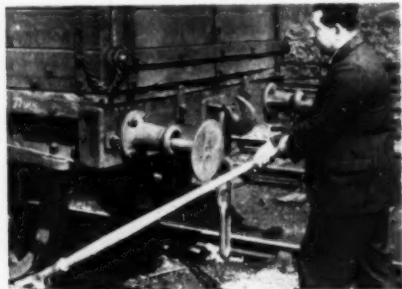
## BULLFINCH TORCH

**B**URNING ordinary coal-gas the *Bullfinch* self-blowing torch will produce temperatures in excess of 2,600 degrees Fahrenheit for brazing, silver soldering and sweating operations. Based on the principle of the Bunsen burner, the torch is designed to draw in a sufficient quantity of air to ensure complete combustion of the gas.



## SLIM BODY PUNCH

**T**O facilitate punching in awkward corners, such as the flanges of "T" and "H" sections, the *Besco* hand punch has been made with a special narrow body. Holes in sheet steel up to 16 s.w.g. in thickness can be sheared with the punch. Interchangeable dies enable holes ranging from 1/16in. to 7/32in. in diameter to be cut. Made for rough treatment, the punches are claimed to be virtually unbreakable.



## WAGON MOVER

**I**T is often necessary to move railway wagons short distances in works sidings when no locomotive is available and the *Newman* wagon mover has been designed to make this operation possible. Made of aluminium alloy, the portion bearing on the rail head contains two hardened steel insets which grip it and allow the full thrust to be applied to the wheel.



# MANAGEMENT AT WORK

## The Manager Writes

NEVER has there been a greater spate of print concerning the theory of management than there is to-day. Most businessmen, quite rightly, tend to view the flood with some suspicion. They know from experience that they can get more valuable ideas from a chance conversation with a fellow businessman than in reading a whole library of text books.

The International Committee for Scientific Management (a shrewder body than its title would suggest) realises this. Side by side with its weightier tomes, it publishes periodically a portfolio of international exchange letters. These are simply informal letters from businessmen in different countries, outlining their problems and the ways in which they are tackling them—indeed, a picture of management at work.

The latest portfolio, edited and published for the committee by the National Management Council of the U.S.A. (\$2) contains ten such letters, from businessmen in Denmark, Switzerland, Finland, Great Britain and the U.S.A.

Reading the letters, one is struck by the universality of management's problems. A Danish manufacturer of electrical equipment, for instance, is worried by the problem of human relations in a highly mechanized factory. Technical and marketing problems he has solved, but the human factor remains. Mechanization does not reduce the worker to a robot.

"I am not of the opinion," he writes, "that mechanization of production reduces the requirements on labour's intelligence and independence. Speaking from experience, I insist that the contrary opinion is true. Not even the best mechanized production is so perfect that labour's effort can be reduced to passivity. On the contrary, we can only use men with the best qualifications to operate

the complicated machines, and we would be in an unfortunate position if we relied upon unskilled labour, poorly endowed by nature and without the slightest interest in the functions of the machine."

Good operators are, *ipso facto*, well educated, and therefore need good working conditions. It is therefore management's business to concentrate on:—

(1) Organization of the technical staff in such a way that natural and highly individualistic abilities of each engineer are given free scope of development and that the technical staff act as a unit.

(2) Integration of the internal organization as an organic part of the productive facilities.

(3) Development of human relations.

## Growing up by Leaps

THE problem of growth, and particularly of the small family concern into a less paternal organization, is another of universal application. Two men—the director of a Finnish retail chain and a Swiss manufacturing butcher—both tell of trials surmounted expanding from the paternal set-up that was a legacy of the founder. Both firms found that what had to be done was not merely to expand the existing framework. It was necessary to switch over completely from a state in which each executive was responsible for a vertical section of the business, supervising all activities connected with a particular product or service, to a horizontal functional division, with specialists handling such functions as purchasing, manufacturing and marketing for the whole organization.

"This system," writes the Finnish manager, "pre-supposes a very good and confidential co-



A VARIATION of "music while you work" has been introduced by some Danish factories and takes the form of a daily book reading which has become very popular with employees. A young actress reads over a microphone every morning, a few chapters of the "book of the week," which the employees themselves have chosen in their own book club. So that the workers hear every word of what is being read, car-phones are provided instead of loudspeakers. This also leaves the question of whether to listen or not to listen to the choice of the individual.

operation between the functional departments at all levels. For this purpose, interdepartmental committees have been set up, and these have a positive effect on the creation of *esprit de corps*. Simultaneously with the reorganization, a delegation of further executive power was extended down the line, and this also got a very good response."

The danger of over-organization was counteracted by giving suitable tasks outside their main function to executives without sufficient work in their own organizational position. In addition, an organization and methods department and a training course for supervisors were introduced.

The Swiss manager sums up his own similar experience: "With the motto, 'I am looking for men who can make mistakes,' I have done my utmost to develop very subordinated associates into confident managers of their respective departments."

### Workers' Consultant

**D**ISPUTES over time study are all too common, and the bulk of them are based on sheer ignorance on the part of the workers affected. The manager of a British varnish and paint manufacturing firm, employing between 700 and 800 workers, has solved this problem by training one man on the shop floor in the principles of time and motion study.

Normally, this man carries on his work as a grinder, but if a particular application of time or motion study is challenged by the workers, he at once investigates the situation in order to satisfy himself that what is proposed is reasonable. His decision is accepted by the other workers and by management without question, and the idea that an employee is at the mercy of his employers who may take unreasonable advantage of the relationship, is destroyed.

### Safeguard Your Freedom

**B**ENJAMIN Guinness, banker and international financier, died in 1946 at the age of 70,



Loel Guinness: his father advised him how to run an international fortune.

leaving a fortune estimated at between £10 million and £60 million. Just how rich he was nobody knows, for his will was registered in Switzerland, where he had established residence, and the Swiss keep wills secret.

An extract from the will, however, was recently read during a Paris court case, in which Benjamin's second wife contested the will. It gives the advice of a successful businessman on how to run an international fortune.

Addressed to his son Loel, the extract runs: "You are my sole heir. Nowadays, fortunes such as ours are exposed to great dangers. In Queen Victoria's time they were as safe as the movements of the stars.

"I advise you to get a good American businessman to administer your affairs. Take care to pay him well. But the principal thing you must remember is to establish residence in Switzerland. This is much the safest country in Europe. If you fail to establish Swiss residence, try Panama, Australia or even Timbuctoo. In any case, safeguard your freedom of movement at all times. This is what I did throughout my life."

### Leisure is an Incentive

**O**NE snag about incentive bonuses is that, as soon as the pay packet reaches a certain thickness, absenteeism soars. Many firms with a large percent-

age of married women workers have found that Friday afternoons in particular show a heavy slump in attendance.

Mr. G. Kenneth Horner, managing director of a Chester-le-Street sweet firm, believes in recognizing the obvious, and bases his own incentive scheme on the value of leisure, as well as of cash.

His workers (mainly women) are split into teams, each team including workers from the preliminary boiling stage right down to packers. A weekly output target is fixed for each team on the basis of 75 per cent. of the possible output of the machines operated by its members. This figure represents an increase of 15 to 20 per cent. of the actual output obtained before the introduction of the scheme. If a team has reached its target by Friday lunch time, its members can go home in the afternoon, though they receive pay for the whole day. If, however, they work on after reaching their target, they get double pay for the Friday afternoon.

Results of the scheme, described in a recent issue of our associate journal *Personnel Management, Welfare and Industrial Equipment*, have been spectacular. Output per worker has jumped, and the target has been passed every week for fifteen months.

### Tell Your Barber

**B**ARBERS are often opinion leaders in the community, and many a barber-shop discussion has changed a man's mind on various subjects. Recognizing this, the managing director of the Caterpillar Tractor Company recently organized a "Barber's Day" at his Peoria, Ill. plant.

Every barber in the district was invited, and 101 accepted. A plant tour, the showing of coloured films, and discussions with members of the board were on the agenda. Peoria barbers are now well fortified with facts about Caterpillar's policies and conduct, and are likely to defend the company against unfair criticism.

# How a Bonus Scheme Solved Their Office Labour Problem

By C. BRYANT

**Payment by results: in the factory, an accepted tool of management; in the office, a matter for argument and speculation. Although not necessarily applicable to all offices, such a scheme can be a success. Here are details of how K and L Steelfounders and Engineers, Ltd., pay by results in their typing pool and punched card department.**

**W**HEN they abolished personal secretaries in favour of a typing pool, K and L Steelfounders and Engineers, Ltd., of Letchworth, Herts., made their first experiments with payments by results in the office. The two-fold purpose of the scheme was: first, to attract women workers in an area where there is much competition for their services; secondly, to make overtime attractive for those periods in the year when it becomes necessary. The application of the scheme was deliberately limited to some ten or a dozen girls in the typing pool, together with three girls in the punched card department.

The scheme works fairly simply. Office staff concerned are paid day rates based on age and merit. In addition to this they get a bonus,

the size of which depends on how much work they can do over and above the quantity expected in a given period of time. The "quantity expected" is defined in standard minute values for each operation and these values are the result of work study.

The standard minute values cover all the principal and auxiliary operations, and there are, in addition, a number of safeguards and provisions. To quote from the work specification of the typing pool: "The standard minutes cover contingencies and rest requirements and will be credited only for a high standard of typing and acceptable to the management. . . . All errors must be neatly corrected, and any letter, order, specification, list, etc., returned to the typist for re-typing as a result of the typist's

mistake, will not be recorded and the offender will be thereby penalized." On the other hand: "Any time spent on correcting errors which are the fault of the dictator or writer will be recorded and credited at day work rates. Cleaning machines and general tidiness of equipment are included under special allowance values."

All work not set out in the specification is considered as day work and is credited at day work rates. Day work rates are also paid if, for reasons beyond her control, an operator is kept waiting for more than five minutes.

The number of minutes by which the standard minutes exceed the time taken are paid at the operator's bonus rates, which are: adults—1s. per hour; under 21 years of age—8d. per hour. The bonus is calculated weekly and paid the following week, and the amount varies between about 10s. and 25s. per week.

Each operator records her own details of work done, delays and waiting time on a sheet which is checked by the supervisor. Time spent in the department delivering mail, collecting stationery, delivering dictating machine cylinders, etc., is recorded under "Delays." All values include 12½ per cent. on basic times to allow for rest and contingencies. An allowance of 5 seconds per piece of work (i.e. letter, invoice, order, etc.) is given to compensate for time spent in fetching new work from the supervisor. This covers all movements within the depart-

## WORK VALUES FOR THE TYPING POOL

### LETTERS

Per Line	Octavo	Quarto	Memo	Heading and Closure
Dictaphone	15 secs.	20 secs.	20 secs.	140 secs.
Manuscript	15 "	20 "	20 "	140 "
Internal Memo	15 "	20 "	20 "	NIL
Circulars or Standard	15 "	20 "	20 "	60 secs.

### REPORTS

Per Line	Plain Type	Ormig
Dictaphone	25 secs.	30 secs.
Manuscript	30 "	35 "
Laboratory	35 "	—
Period Accounts	35 "	—

Setting out time for Period Accounts report should be entered as day work.

### LISTS

Per Line	Octavo	Quarto or Foolscap	Brief	Vertical Lines
Plain Type	25 secs.	30 secs.	35 secs.	15 secs.
Ormig	30 "	40 "	45 "	15 "

Job No.	Type of Card	No. of Columns	A.S. Ms. per 100 Cards	
			Punching	Verifying
1	Income Tax	32	33	30
2	Payroll	38	30	27
3	Labour Analysis	38	39	38
4	Purchase Analysis	35	56	55
5	Stores Requisitions	38	42	41
6	Sales Analysis	38	42	41
7	Cost of Sales	29	41	39
8	Foundry Internal Sales	36	41	39
9	Reject Notes	38	34	33
10	Journal Vouchers	26	25	23
11	Cash Books	26	25	23
12	Nominal Ledger	26	25	23
13	Personal Ledger—Sales	28	36	33
14	" " —Purchases	30	32	28
15	Liquid Metal Analysis	10	20	18
16	Plant Inventory Register	38	23	22

**Some of the work values for punched card operators. The operator has to prefix the job number with the letter P or V, to show whether punching or verifying.**

ment. A period of 10 minutes is also allowed at the beginning and end of each day for cleaning machines and tidying up. The standard minute value for this work is 30 minutes per day.

It would be impractical to reproduce the whole of the summary of work values evolved when the scheme was put into operation. However, a few extracts will serve as a guide to those who are considering the installation of such a plan. Tables are given on page 57, together with figures for the tabulating machine department (above). The latter are naturally subject to fairly numerous changes as new uses are found for the punched card installation.

In the typing pool, letters—a common denominator for all BUSINESS readers—are assessed on the basis of an allowance for the heading and closure and at a rate per line. Letters which continue for more than one sheet count as one extra letter for each sheet completed. All lines begun rank for credit. The typing of reports is assessed in much the same way, most of them being done on quarto or foolscap paper.

Similar provisions are made for typing purchase orders, shop orders, process work, lists, specification sheets, quotations or tenders, acknowledgements of orders,

amendments, advice notes, factory release notes, etc.

Operation of a spirit process systems machine rates 5 seconds per sheet for running off, with 22 seconds for putting on the stencil and 30 seconds for taking it off. K and L define a list as any tabulation or list of figures; a summary or form as any sheet which requires the insertion of only one or two figures. When printed sheets are used for lists and the tabulations do not completely fill the sheet, the nearest size is counted.

The application of payment by results to the punched card department is limited to punching and verifying operators, other tasks having been deemed unsuitable for evaluation. The principles are identical and the application is very similar. Standard minute values cover contingencies, rest requirements and a maximum scrap allowance. The values remain unaltered unless the methods, material or conditions of working are changed.

Payment is only made for cards which are correctly punched. Incorrect cards found by a verifier are returned to the punch operator concerned for replacement. All faulty cards have to be replaced and verified before they can be submitted for checking. Time spent in correcting errors due to faulty presentation of the original infor-

mation is recorded and credited at day work rates.

The method of payment is also similar to that used in the typing pool. An example of the method of bonus calculation appears at the foot of this column, a summary of work values on the basis of an allowed standard minute per 100 cards being shown opposite.

As in the case of the typists, operators fill in daily work sheets which are checked by the supervisor. The standard minute value for this work is 15 minutes. Allowances are given for cleaning, making ready, etc.

What of the results of the scheme as a whole? From the operator's point of view, these have already been stated in terms of cash—10s. to 25s. extra per week. From the company's point of view, the results are more difficult to state. The two original objectives have been attained: office staff of the right quality have been drawn to, and have stayed with the company. The standard of production is good, and the staff is both able and willing to cope with extra work when they are asked to do so. The effect of the scheme is to pay well for good performance, and to pay more directly than would be possible on a weekly wage basis.

#### **CALCULATING PRODUCTION BONUS FOR A PUNCHED CARD OPERATOR**

Hours Worked	=	8
Recorded Daywork	=	25 mins.
" Lost Time	=	18 mins.
Work Produced —		
Punched		
200 Payroll	=	60 S.Ms.
200 Tax	=	66 "
900 Labour Analysis	=	351 "
200 Purchase	=	112 "
Verified		
150 Sales Analysis	=	61 "
75 Sales Ledger	=	24 "
100 Liquid Metal	=	18 "
		692 S.Ms.
Plus — Daily Work Sheet	=	15 "
Cleaning, etc.	=	30 "
Daywork	=	25 "
Lost Time	=	18 "
		780 S.Ms.
Less — Actual Minutes		
Worked — 8 x 60	=	480
		300
Bonus Rate 8d. per hour	=	40d.
Operator's Bonus — 8 x 300	=	2400
		60
Operator's Pay Performance	=	163 %
780 x 100	=	163 %
Bonus as a percentage of Bonus Rate	=	43 %





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# Increased Efficiency Through Better Stationery and Systems

By HAMISH ROBERTSON

**This article describes how an accountant increased efficiency in his office by evolving and adapting methods to suit his particular requirements. Colour coding of files, pre-printed correspondence requiring no typing, and a work state board are some of the methods utilized.**

**M**OST managers wish they had more time to get out of their offices and compare their methods with those of other organizations. In this respect at least, the lot of the accountant is to be envied. He spends much of his working life in the very kind of visiting that will enable him to see why one concern prospers, while another does not.

Of the accountants themselves, it might be said that some conduct their own affairs by applying methods which time and experience have honoured, while others do a little better by trying to learn from the successes and the failures of the organizations which it is their duty to serve. Mr. Ancrum Evans belongs to the second group of men. In three and a half years, his practice has grown to sufficient size to justify a staff of three and as it has grown Mr. Evans has evolved and adapted methods to suit his needs.

The work of a professional accountant's office falls into two fairly distinct kinds: the preparation and audit of accounts, involving long hours of clerical work, culminating in most cases in several hours' typing of the figures produced or verified; and on the other hand a vast amount of tax work, opinion and management. The bulk of this is done by correspondence and a certain amount of

telephoning; in interviews being relatively infrequent.

The first thing that struck Mr. Evans in his visits to other concerns was the number of times he saw preconceived office methods being applied to circumstances which were completely unsuitable. In considering the stationery to be used by his own organization, he therefore decided to produce a series of *pro formas* specially devised to meet particular circum-

stances. By hand completion, these forms save his own time and that of his secretary and tinted papers assist reference.

A typical example is the enclosure slip shown on this page. The body of this document is preprinted with a series of phrases which not only save a great deal of letter writing, but also encourage clients and others to make acknowledgement by filling in the space at the bottom. Acknowledgement is fur-

The image displays three pre-printed stationery forms. The top form is an 'ENCLOSURE SLIP' for Ancrum Evans, Chartered Accountant, located in London. It includes fields for 'To', 'Your Reference', and a section for 'As arranged (tick in red ink)'. Below this is a list of four items to be enclosed, each with a corresponding number. The bottom form is an 'ACKNOWLEDGMENT SLIP' for the same firm, with fields for 'To', 'Your Reference', and a section for 'The following enclosures were supplied'. The third form is a 'BUSINESS REPLY LABEL' for Ancrum Evans, Chartered Accountant, 7, Mansfield Street, LONDON - W.1.

**Pre-printed stationery used by Mr. Evans includes enclosure and acknowledgment slips and business reply labels.**



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ther induced by the prepaid business reply address which appears on the back. Carbon copies of the form are entered with instructions for the treatment of the papers on their return.

For forwarding the large number of papers required by the Inland Revenue, a separate blue enclosure slip has been printed without a business reply address on the reverse. Similarly, acknowledgement slips are used with a tear-off carbon copy. In this way, Mr. Evans knows exactly what documents have not been acknowledged—an important consideration in a practice where so much of the mail consists of despatching and receiving papers. Incidentally, the cards which some people use in place of letters provide no office records and for that reason are unsuitable for the practice.

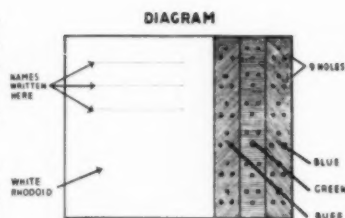
With the growth of office work, Mr. Evans has found it necessary to design telephone message and interview *pro formas* to encourage everybody concerned to make

proper records. In the case of the telephone forms, the time and date of the call are recorded. At the foot of the form there is also a special panel for describing the action taken.

To eliminate waste in stationery, Mr. Evans uses only three sizes of envelope and two sizes of headed paper. The envelopes are 4½ inches by 3½ inches, 11 inches by 5 inches, and 15 inches by 10 inches; the letter heads are 7 inches by 8 inches, and 10 inches by 8 inches. Both sizes of letter paper fit into the same envelope—the large by folding into six, the small by folding into four.

Because the "turn out" of the paper work is an important aspect of an accountant's practice, special attention has been paid to covers. Accounts and reports are either typed on the large size letter paper or on account paper. The smaller folder, a backing sheet, holds a few sheets of the large notepaper, and folds vertically in half displaying the title.

Preferring accounts that fold in



A diagrammatic version of the work state board.

book form, Mr. Evans makes his large folders in two separate halves. This enables accounts to be made up with a considerable number of pages, and without the restriction usually associated with making the sheets fit into the fold of a one-piece folder. This way the paper is stapled into the covers, the staples themselves being hidden by the folds of the cover. Cellophane tape keeps the folds in place and makes it impossible to tamper with the pages.

Certain records are best kept in a semi-permanent form, but books are expensive. Paper with convenient rulings has therefore been



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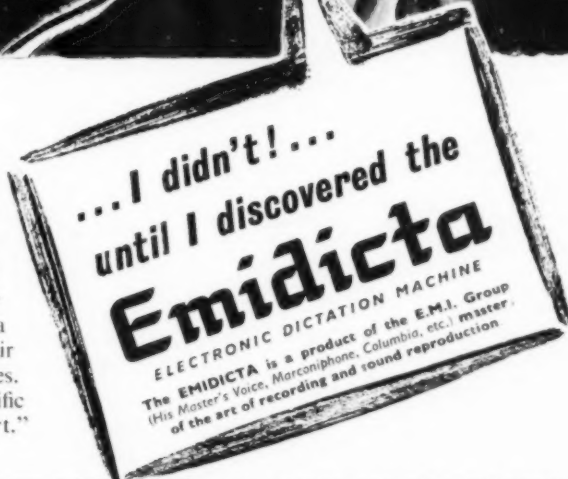
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bought cheaply in bulk and, with the aid of a long arm stapler and manilla folders, books of up to 20 pages have been put together in the office.

The filing system itself is naturally based on one file for each client. Frequently, however, one file is inadequate and several are required. In such cases, a standard method is adopted for dividing each client's affairs and incorporating a colour code which enables papers to be found on sight.

Letters to and from a client go into a red file. This is the client's own personal file and is used for all other correspondence until a specialized file is opened. Specialized files include blue folders for letters to and from the Inland Revenue about a particular client, and green folders for letters to and from other persons about the client. Two files of one colour can be opened; for instance, in a complicated tax case there might be three blue files—one for property, one for Schedule D profits, and one for sur-tax. Buff files are

used for working papers and vouchers.

The existence of these additional files is shown by small circular labels of the appropriate colour which are gummed next to the name on the client's red file. Anyone looking at the client's file can thus see at a glance how many other files have been opened.

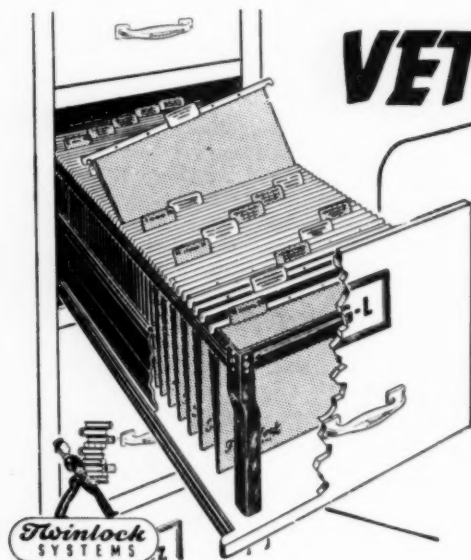
### **Aide Memoire**

The colour coding of the files has a further significance in connection with what is known as the work state board. This is an attempt by Mr. Evans to provide a visible *aide memoire* which will avoid the necessity of looking through files to see that they are up to date.

The state board consists of a vertical strip of white plastic down the left side on which the names of the clients are written; the right hand side is made of coloured strips with holes to take coloured pegs. The colour of the background indicates the type of

work in hand: buff for accountancy, green for miscellaneous, and blue for tax. The colour of the peg indicates whose initiative is required: red for client, blue for Inland Revenue, green for some other party, black for the office, and so on.

Finally there is the question of fees. All accountants base their charges on the time which they and their staff spend on the client's affairs, and the usual practice is to record it in a diary. The bugbear of this method is the monthly summary which has to be prepared and posted to the clients' time records. By using a specially designed weekly form which incorporates a summary, Mr. Evans has eliminated the monthly summary. A further saving of work is achieved by having the time of ancillary staff recorded by the person responsible. Rough rules can easily be formulated so that this can be done, and it is a great saving to have two (or even three) people's time recorded on one sheet of paper.



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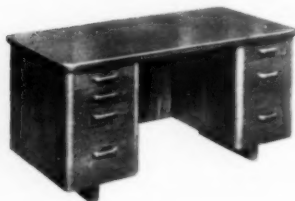
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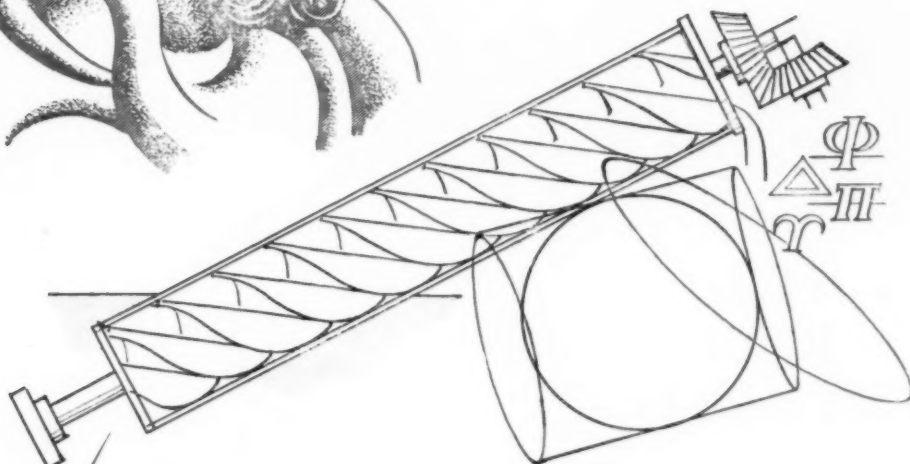
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*"Give me a fulcrum and I will raise the earth". In Archimedes' day the problem of time-saving was frequently solved by the fruits of his labours. To him we owe the famous water screw and numerous discoveries in the fields of hydrostatics and mechanics. In industry today Rediffusion saves time and prevents loss. Its contribution to time-saving is a staff location system which makes instant contact with every corner of the factory. Production and welfare announcements can be broadcast to individual departments or all departments at the same time. Rediffusion prevents loss in terms of output where 'Music-while-you-work' programmes counteract production lag caused by tedium and fatigue. May we help you to save time?*

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machine is the *Olympia S.M.2*. Light enough to be carried easily, it does not suffer from the sealing-down usually to be found on portables.

Among the features of the machine is an 88-character keyboard, with plastic keys shaped to the fingers. They are finished to tone with the rest of the machine which may be burgundy, black or olive green in colour. Three type faces can be supplied; Pica, Elite and Micro. The space bar is built into the frame of the machine.

Other features of the *S.M.2* are: three line spaces, stencil and

ribbon colour switch, quick carriage release and touch adjustment. Up to twelve carbon copies can be made successfully.

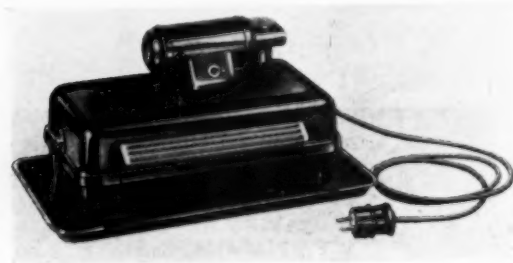
A metal carrying case is supplied as standard, but a leather presentation case is available at extra cost.

—(Enquiry Ref. No. 010/45.)

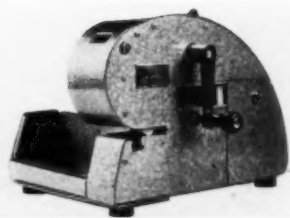
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—(Enquiry Ref. No. 010/42.)

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**A**NYONE who has had to stick stamps on large numbers of envelopes knows what an unpleasant

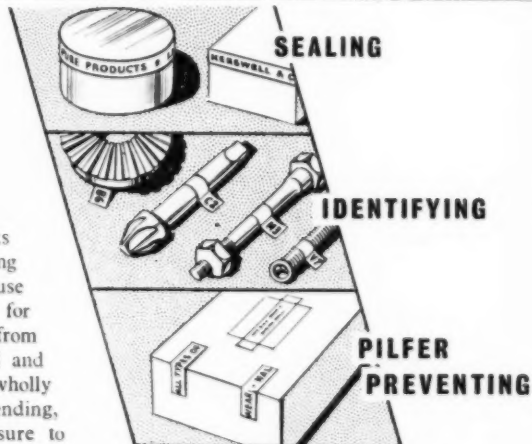
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ant job it is. A new British machine, the *Parker* stamp affixer, eliminates this drudgery.

Envelopes are stacked in a hopper and a turn of a handle feeds them through singly and fixes and counts the stamps. Rolls of 480 or 960 stamps (obtainable from any post office) are loaded into the machine. A lock protects the rolls against pilfering and a special key is necessary to re-set the counter.

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—(Enquiry Ref. No. 010/43.)

#### The Dimafon

**M**ADE in Germany the *Dimafon* dictating machine which is now being distributed in this country is based on gramophone principles. The machine records up

**The Dimafon records up to 20 minutes dictation on a plastic disc.**



to 20 minutes of speech on a double-sided, unbreakable, plastic disc; single-sided pliable discs can be used for memos, reports, etc., and they can be easily folded and sent through the post.

"Over-speaking" automatically erases a previous recording; this technique is also used for making corrections. Both sides of the disc can be cleared of speech at once by passing a button-operated electro-magnet over one side. The plastic discs can be used thousands

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The microphone is a dual purpose instrument that can be used close to the mouth for ordinary dictation or—when the sensitivity is increased with a switch—it can lie on a desk when it will record speech from up to 30ft. away.

Red and green lights indicate when the machine is recording or playing back and an "on," "off" and "rest" position switch is pro-

Turn to page 108

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The mere insertion of the time card produces  
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and day to day records automatically positioned.



Overall size, 16½" x 14½" x 9½"

*For further details of this modern Attendance Time Recorder—now manufactured in England—  
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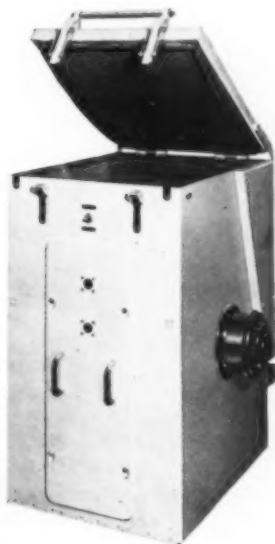
The Mervac is a new copier, with a 20in. by 16in. printing area, equipped with high intensity mercury lamps controlled by an automatic shutter. It is designed for use with reflex material, the latest semi-dry processes, autopositive papers and for process work. A full range of photocopiers as well as enlarging reducing models are also available.

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## Short Cuts to OFFICE EFFICIENCY

### Streamlining

#### Routine Reports

MUCH office time is spent in preparing routine reports that, perhaps, are identical with those previously issued, plus one small addition. Time and money can be saved by using photo-copying or duplicating methods using a "master." Instead of re-typing the whole report each month, the single additional figure can be typed in and the necessary number of copies run off.

With photo-copying any sort of information may be added and new prints made from last month's report. In many instances, pencilled

schedules may be printed to save time in typing and checking.

Much detail—shillings and pence and zeroes—can often be eliminated from reports, saving typing time without prejudicing accuracy.

#### Use Your Figures

EVERY office produces a mass of figures essential for the normal financial transactions of a business—paying workers and suppliers, and invoicing customers. All too often these figures, which have cost considerable time and money to establish, are discarded as soon as they have served this immediate purpose.

Routine financial records, however, can be used as a day-to-day guide to management policy. With only a modicum of extra work, the accounts department can offer a special series of useful reports for management, based on the data normally recorded for payroll, cost and accounting purposes.

These reports can be issued at various intervals, some daily, some weekly and others monthly, in the form of charts or graphs, in statistical or tabular form.

Here are thirteen examples of reports that can be prepared simply, from figures already available, which will give management an at-a-glance summary of the efficiency of the organization:—

(1) A graph showing the efficiency with which each type of machine is being used. On such a graph, the "ratio of standard machine hours to actual machine hours" and the ratio of "actual machine hours to available hours" can be plotted.

(2) A graph showing the num-

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Can your Accounts department keep a close enough watch on every account. Here is a new system which has been specially introduced to help every business carry out this essential watch, with little effort and less labour. It gives a rapid visual picture of every account. Each is visibly separate, the overlapping edge summarising the story on the record.

Urgent action is pin-pointed by coloured signals, so that extended credit, high statements, overdue payments shout for attention.

There are also standard Shamoleaf records to meet all other needs. Equally, records can be designed specially to your instructions. Whichever you have, you have a streamlined system—the speediest for reference, the fastest for entry. One clerk can handle thousands of such records. Why? Because the binders are streamlined to slide instead of lift; the mechanism is so simple it permits a record to be taken out or put in at a second's notice. And the whole system is designed to save space, time and clerical labour—whether the records number hundreds or tens of thousands.

Just write "Shamoleaf for Accounts" on your letterheading and full details will be sent you by return.

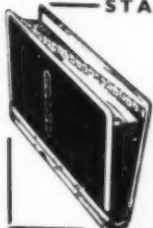
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Sales and Purchase - Stores and  
Stock Control - Plant and Machinery -  
Case and Container - Personnel.

**Shannon Systems**

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ber of man-hours worked in each product division and the ratio of man-hours worked to the value of the finished products.

(3) A graph showing the ratio of productive and non-productive hours to total hours worked in each department and in the factory as a whole.

(4) A graph showing the ratio of indirect labour and factory expenses to direct labour.

(5) Where standard costs are

used, a graph showing the amount of non-standard direct labour cost and its ratio to standard direct labour cost.

(6) Tables showing labour turnover and the number of "productive" and "non-productive" workers in each department.

(7) Charts showing the trend of average earnings of various classes of labour. These may be an indication of the efficiency of the labour force.

(8) Reports showing, in units and value, the amount of products finished daily, weekly and monthly.

(9) Stock analyses, showing the value of each class of stock and indicating whether it is being increased or reduced.

(10) Stock turnover analyses.

(11) Manufacturing expense statements showing the amount of each class of manufacturing expense and its relation to either productive hours or productive workers' earnings.

(12) Analyses showing in detail the amount of each type of raw material, component, etc., used in each department.

(13) Analyses of the cost of various classes of plant and equipment maintenance and repair.



One way of impressing employees, transport contractors and the G.P.O. with the fragile nature of products is by appealing to their sense of humour. These colourful gummed labels, seen on the left, are used by Benjamin Electric, Ltd., on their packages, crates, etc., in an effort to get more careful handling and to cut down damage to goods in transit.



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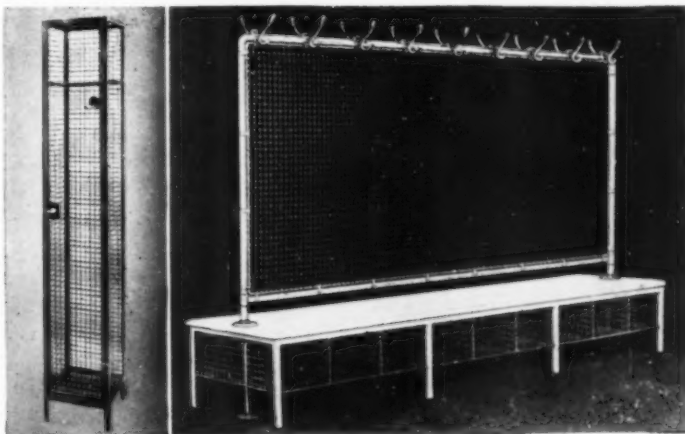
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FITTINGS  
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WIREWORK  
LOCKERS**

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The wooden seat is supported by an angle frame and tee bar legs, incorporating boot and shoe compartments approximately 12" wide x 9" high x 12" from front to back. Send for List BU 830.



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OCTOBER, 1951

75

## More New Factories For Expanding Industry

**E**XTENSIONS to the Edmonton, London, works of Universal Postal Frankers, Ltd. were officially opened recently by Mr. Austen Albu, M.P. The mayor of Edmonton and Mr. F. Shattuck, a director of Pitney-Bowes, Inc., were also present.

The extensions consist of a new assembly shop, new offices and a large canteen; they cover about 50 per cent. of the area of the old factory. In his opening speech, Mr. Albu, who is Member for Edmonton, complimented the company on its up-to-date plant and products, which, he said, were exported to 57 different countries. They constituted just the type of exports which the country needed, since they did not use large quantities of imported material, while the skill and craftsmanship em-

bodied in them was of great value to national prestige.

Speeches were also made by the chairman and managing director, Mr. G. V. Wynne-Jones, and by Sir Richard Winstedt, K.B.E., C.M.G., one of the directors.



Universal Postal Frankers' new extension at Edmonton.


★  
**S**IR Cecil Weir, formerly chairman of the Dollar Exports Board, has been appointed chairman of the British Tabulating Machine Co., Ltd., manufacturers of *Hollerith* equipment. A biography of Sir Cecil was published in *BUSINESS* in April, 1950.

★  
**B**URROUGHS Adding Machine, Ltd. are to build a second factory on the Strathleven Trad-

ing Estate. The new factory, which Scottish Industrial Estates will begin work on almost immediately, will be completed within eighteen months to two years. It is on the same estate as their existing factory, which is now employing 900 workers and exporting over 55 per cent. of its output to over 40 countries, including the U.S.A. itself.

In addition to producing machines already manufactured by Burroughs in their two existing factories, the new works will produce

*Continued on page 108*



# 100% NIGHT SECURITY

The BLICK WATCHMAN'S CLOCK gives the greatest security possible to your premises.

Satisfy yourself and your watchman by installing this modern watchman's control system embodying the following points:

● Strong eight-day movement	● Records can remain in the clock at week-ends
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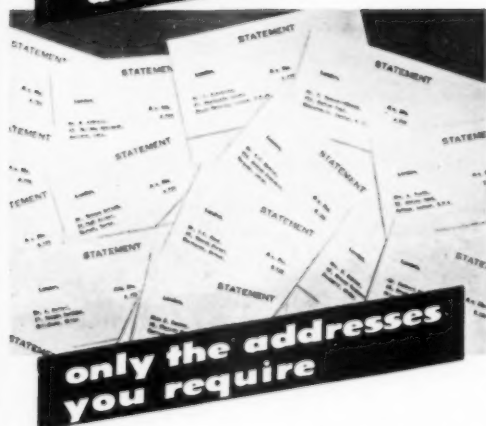
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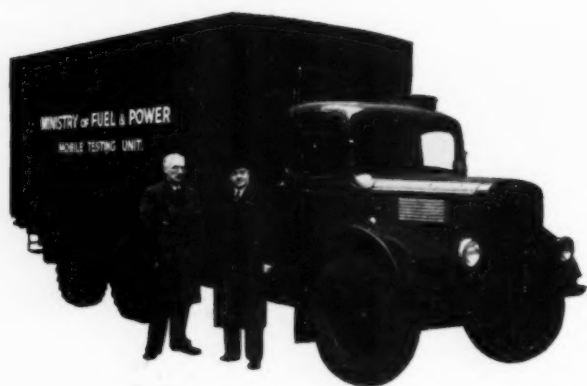


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9310-60



By getting experts in for an audit of their fuel plant, and carrying out their recommendations, John Wright & Son (Veneers), Ltd., gained an immediate saving of 26 per cent. in coal consumption. This increase in boiler efficiency enabled them to expand output by approximately the same amount without exceeding their allocation of fuel.

## Efficiency Check Saved One Ton of Coal in Four

By A. G. THOMSON

**T**O most businessmen, fuel economy makes sound sense. Reduced consumption of coal and coke means lower costs and higher profits. In a time of acute coal shortage, it may even mean the difference between production and an idle works.

Fuel consumption, however, can only be reduced by increased efficiency of the consuming plant. Just how much room exists for improvement must be gauged by measurements that, to be accurate, demand expensive instruments and skilled investigators. These are not readily available to the small firm, and may even be an uneconomic investment.

To meet this difficulty, the Ministry of Fuel and Power runs a Mobile Testing Unit, which will rapidly and accurately "vet" a firm's heating system, report on any deficiencies observed, and recommend action to overcome them. Businessmen are—not without justification—sceptical of government intervention in their concerns. But the technicians of the Testing Unit are engineers, doing a technical job, without political strings, and assessing their work

solely in terms of B.T.U.'s. Within these limits (and probably because of them), they are doing a sound job in hundreds of firms throughout the country.

Take an instance, almost at random. In 1949, the directors of John Wright & Sons (Veneers), Ltd. called in the Unit to test their installations. The Unit came, did their job, and made certain recom-

mendations. These were put into effect, and coal consumption immediately dropped by 26 per cent. This enabled the output of veneers to be increased, and consumption rose again, but boiler efficiency remained over 25 per cent. higher than before the Unit's visit.

Wright's manufacture both rotary-cut and flat-cut veneers in two factories, at Mile End, London, and at Dagenham. On arrival at the factory, the timber from which the veneers are made is steamed in pits for periods ranging from a few hours to as long as three days. It is then put through cutting machines and the cut material processed and sorted into different sizes. The sheets, slightly oversize owing to their wet condition, are dried in steam-heated ovens and trimmed to the final sizes required by customers.

Large quantities of steam are wanted for the steaming pits and drying ovens, and consumption at Mile End alone is in the region of 250,000 lb. per 24-hour day. Fuel consumption is thus considerable. When the Unit first visited the factory, the boiler plant consisted of two Lancashire

● **In addition to the Mobile Testing Unit described in this article, the Ministry of Fuel and Power will help businessmen by:—**

- 1 Providing less elaborate tests for medium and small size plants.**
- 2 Sending experienced fuel engineers to any plant to advise on general or specific fuel problems.**
- 3 Providing practical instruction for stokers.**
- 4 Supplying literature: 50 bulletins have been issued, each dealing with a specific problem, covering the needs of everyone from managing director to learner operative.**



boilers, each rated at 8,000 lb./hr., and a 120-tube economizer. Both boilers were fitted with forced-draught grates, the grate areas being 38 and 44 sq. ft. respectively. The fuel used was open-cast coal, delivered by river, together with a substantial tonnage of wood waste. This waste, consisting of veneer cuttings, log centres, pieces of bark, etc., was pulverized in a hogging machine before being fed.

The installation was already equipped with temperature recorders on the economizer and a meter steam flow recorder for each boiler, in addition to the standard visual gauges. The steam flow recorders give flow and pressure recordings on the same graph, enabling the output of steam per pound of coal to be calculated for any desired period. Thanks to these instruments, the company were already in possession of a good deal of information concerning their boiler efficiency.

One reason why this was not as high as it should be was that, because of the shortage of skilled stokers, very raw workers had had to be taken on and trained on the job. To these untrained firemen, such terms as carbon dioxide and

combustible gases were as so much Greek. The company felt that the Mobile Testing Unit—in addition to testing out the technical efficiency of the plant—might also prove extremely useful in giving assistant stokers theoretical and practical instruction, and in getting them interested in their jobs.

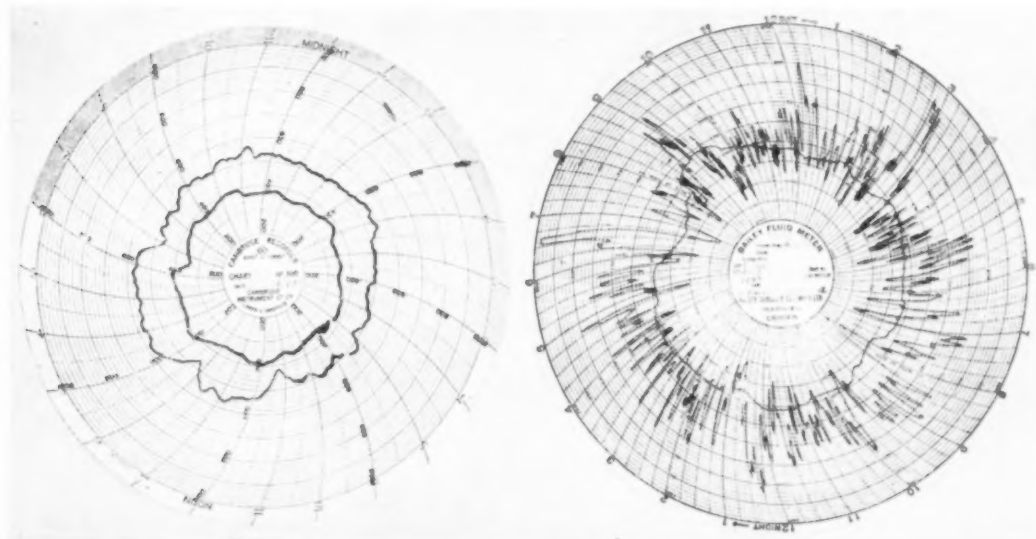
Tests started in June, 1949. The first day was spent in deciding where the necessary sampling holes should be made, and in making them and installing the Unit's instruments. On the following day, the tests started. Conditions were maintained as far as possible equivalent to those encountered on a normal working day. An even flow of wood chips was maintained by the hogging machines, and coal, bark and pieces of wood too large for the hogging machine were fed to the furnaces. A careful check was made of all fuel consumed. All coal was weighed on a weigh-bridge before firing, while the weight of waste wood consumed was obtained by weighing as many bogies of the various woods as possible and averaging them out.

The amount of steam used was found by taking half-hourly readings from an integrating meter,



The interior of the Mobile Testing Unit van.

while temperature recordings in and out of the economizer were taken by mercury-in-steel thermometers and thermo-couples inserted in the various sampling holes. Measurements were taken of the carbon dioxide content of flue gases at various points and the velocity of draught and of primary and secondary air, water gauge readings of draught being



Instrumentation is the first step to fuel economy.



made in all parts of the flue system. All readings were logged against the time of taking them.

Some faults were apparent to the Unit's investigators even before the instrument readings could be analysed. Firing of the bark and wood, for instance, was causing unevenness of the firebed, due to the size of materials, and this upset combustion conditions. The firing doors were constantly being opened for long periods when hand-firing wood waste, with a consequent loss of heat. Low furnace temperatures, apparently due to the sizing of the open-cast coal, with a high percentage of smalls that tended to blacken the fire after firing, also adversely affected combustion.

In due course, the Unit analysed in detail the results that it had obtained, and submitted a report and recommendations for improvement. The plant itself was found to be in good condition. It was, however, not ideal for burning wood waste, and efficiencies achieved could not

be expected to be as high as those obtained from furnaces specially designed for such fuel. The Unit made three recommendations on the burning of wood waste:

(1) use of a higher quality graded coal, which would assist in maintaining a higher furnace temperature, and thus ensure greater efficiency in the combustion of the wood waste;

(2) the reduction of large segments of wood and bark to approximately 4in. x 6in., to ensure an even firebed; and

(3) an improved method of fire-cleaning to reduce the combustible matter in the ash to a minimum.

### **More Production**

In accordance with these and other recommendations, certain changes were made by the company. Dampers were adjusted and fire bars checked for spacing. An induced draught fan was installed to provide additional draught, since the test showed that the chimney was not high enough. At

the beginning of this year, the boiler plant was enlarged by the installation of an economic boiler equipped with a Dutch oven, which will cope with the large sizes of wood. This has enabled the Lancashire boilers to be fired exclusively with coal.

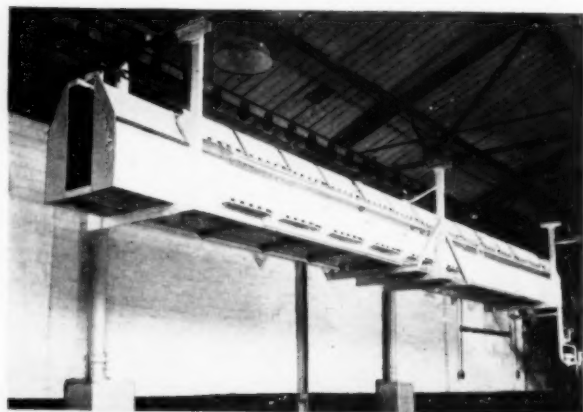
When the Unit first visited the factory, fuel consumption was in the region of 45 tons a week. After the test, it was brought down to 38 tons a week. Production of veneers has since substantially increased, and this has naturally brought about a corresponding increase in fuel consumption, which now averages about 50 tons a week. Current boiler efficiency, however, is about 62 per cent., compared with about 49 per cent. before the test. This improved efficiency is obviously resulting in a very large saving of coal.

The test was carried out by the Ministry's Unit free of charge, but a charge of £15 a day for the Unit's services has since been introduced.

## **OUTPUT REACHES CEILING**

with

### **DE LA RUE INFRA-RED DRYING TUNNEL**



**Valuable floor space saved by  
OVERHEAD installation**

After being hand-dipped wet on wet with white synthetic enamel, heavy metal casings are passed through a 38 panel De La Rue gas-fired infra-red tunnel. The variable speed conveyor travels at an average speed of 3 feet per minute, drying the casings at 300 per hour.

If you have a drying problem, bring it to De La Rue. Write today to:—

**THOMAS DE LA RUE & CO. LTD. (Gas Division), Imperial House, 84/86, Regent Street, London, W.1**

# **'Are you hiding your own steel supplies?'**

*says JACK SCRAP*



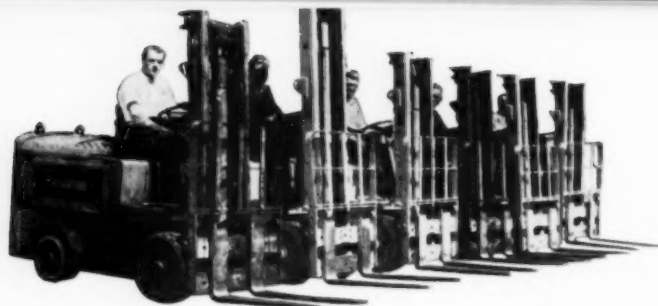
You may not think you are, but those machines you haven't used for years — those old spares you have accumulated — all should be turned out for scrap, turned into new steel. It's the only way to get the new steel that industry needs to keep the works going. Round it up. Turn it in.

Scrap Merchants will help with dismantling and collection.

**Speed the  
SCRAP  
Speed  
the Steel**

Issued for the **STEEL SCRAP DRIVE** by the  
British Iron and Steel Federation, Steel House, Tothill Street, London, S.W.1

S.14

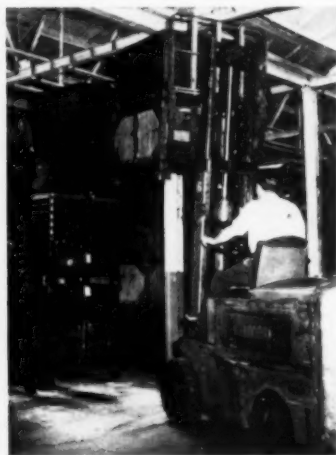


On the left: the men and the machines mentioned in this feature. Automotive Products have a total of ten trucks; between them they handle over 6,000 tons of material a week

## More Speed, Less Space

By ROBERT SPARK

The total tonnage of incoming materials and outgoing products handled by Automotive Products, Ltd., has more than doubled in the last two years. Without the use of modern mechanical handling equipment—efficiently applied—such an increase could not have been dealt with. In the departments of their Leamington plant where Lockheed brakes, Borg and Beck clutches, Thompson tie rods and Mieronic filters are manufactured, six fork trucks are kept fully employed. Because they can keep materials flowing, valuable storage space has been saved.



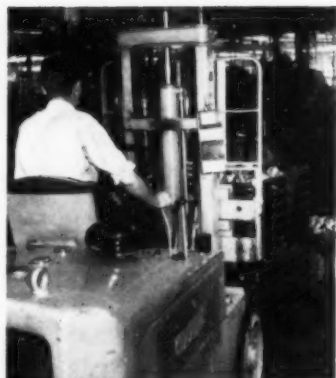
3. Components are kept, until required, in the raw materials stores. Pallets are stacked up to six in height, thus saving valuable floor space. Thanks to good training, drivers can "spot" pallets into position quickly and accurately; thus manoeuvring space is cut to the minimum.

1. About 20 per cent. of incoming materials arrive palletized (Automotive Products own about 3,000 pallets and operate a pool with other firms.) Unpalletized goods are transferred to pallets or tote boxes. Fork trucks take the pallets from the unloading bay to the inspection department as required.



2. Waste journeys and idle truck time are eliminated by operating two control points (serving incoming and outgoing goods) in the plant. Truck drivers receive route cards covering up to four jobs; on completion they return to "control" for fresh instructions. On average, one truck handles a ton every five minutes.

4. Components from the raw materials stores are withdrawn and taken to the machining department as they are wanted. Photograph shows a fork truck which has brought pallet loads of brake cylinder castings to within a few feet of the end of the line. Manual handling will be negligible.



Continued on page 84



## COMPLETE CONTROL BY *Radiophone*

Here's one form of control which will really help your business. Keeping in *telephone* contact with your transport by Pye two-way Radiophone eliminates wasted time and effort and saves you money. Not only can you give immediate advice and check progress of routine jobs — you can meet any contingency by diverting vehicles at will. The Pye two-way mobile Radiophone is in daily use throughout the country — think how it could help you in your business.

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*Business Radio (Scotland) Ltd.,*  
York Street, Glasgow, C.2.

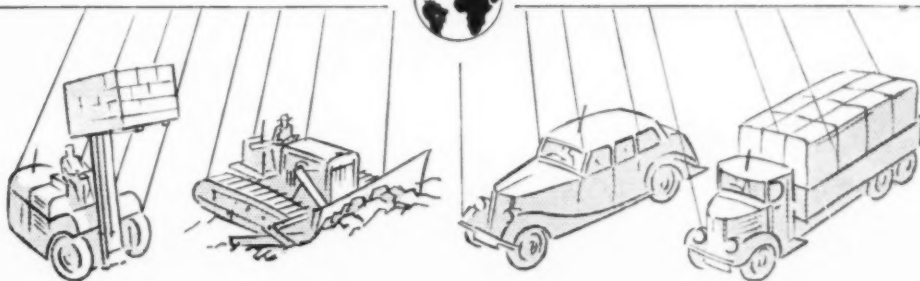


## Telecommunications

CAMBRIDGE



ENGLAND



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Our chairman is a man of few words: he doesn't believe in talking when pictures can tell the story.

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Photoprinting is a valuable business ally—it puts everyone in the picture and helps to put your story across.

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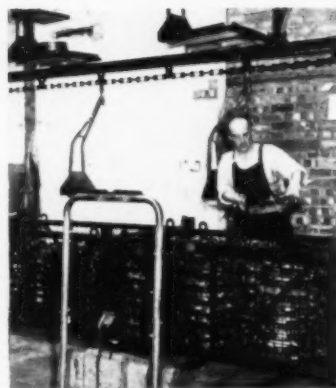
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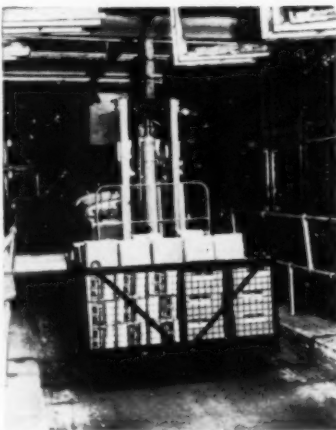
**A. WEST & PARTNERS LTD.**  
Established 1888  
26, BROADWAY, WESTMINSTER, S.W.1  
TELEPHONE: WHITEHALL 5677



5. After manufacture and assembly, finished products are placed in pallets and taken by pallet truck to the finished goods stores. Wire sides of the pallet enable the contents to be counted and checked without being removed—another time-saving factor. All the pallets were made to Automotive Products' specifications.



6. Completed clutches from the Borg and Beck department are carried by conveyor and off-loaded into pallets. Pallet truck is used to move them to the edge of the gangway. Here, they are picked up by a fork truck and taken to the finished goods stores, or alternatively, straight to the loading bay.



7. Introduction of fork trucks meant minor plant alterations. At this point the floor was lowered so that loaded trucks did not foul the conveyor line seen at the top of the picture. Wider gangways (minimum 10 ft.), that were necessary were made good by saving storage space.



8. One of the fork trucks moving out on to the loading platform. Automotive Products have calculated that each truck costs 10s. an hour to run. This sum includes driver's wages, insurance, depreciation (based on 5 years' depreciation) and fuel. Trucks work approximately 47 hours a week.

*Continued on page 86*





*With* **DIESEL** *you've got stamina!*

The Morris-Commercial 5 ton Diesel is a great top gear performer and as gears are used less your road schedules are speeded up. Added to this, fuel costs and maintenance costs are greatly reduced. It all adds up to more profitable haulage — a better investment. And remember — the Morris-Commercial 5 tonner has a body length of 16 ft. 6 ins. There is also a 5 cu. yd. short wheelbase tipper.

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THE GREATEST NAME IN ROAD TRANSPORT



- LORRIES 25/30 cwt. 2-3 ton, 5 ton.
- TIPPERS 2-3 ton, 5 ton.
- VANS 10 cwt. 15/20 cwt. 25/30 cwt.
- Choice of Petrol or Diesel (Saurer Patents) on 5 ton Lorries & Tippers.

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31/1/51

**POWER CUTS** **AUTOMATICALLY SWITCH ON**

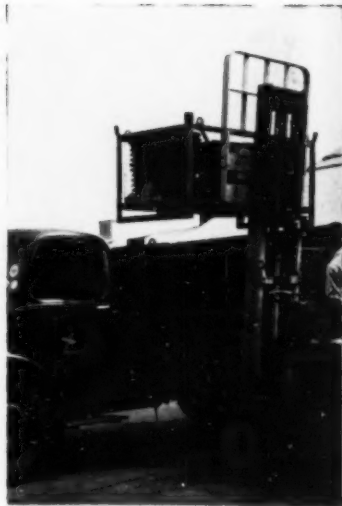


*this G.E.C.*  
*Emergency*  
**LIGHTING SET**

By locating one or more of these units in strategic positions, the risks of loss, damage or danger that may result from sudden darkness are eliminated.

Normally the battery is kept in a fully charged condition from the A.C. mains, through a built-in specially designed G.E.C. charger. When the mains input is interrupted a relay instantaneously switches on the powerful emergency lamps. Resumption of mains supply automatically switches the emergency lights off, and charging of the battery is resumed. The unit operates on 100/120v. or 200/250v. A.C. supplies of 40 to 100 cycles, and one or two 6 volt lamps may be operated from each unit up to a maximum of 60 watts.

THE GENERAL ELECTRIC CO. LTD., MAGNET HOUSE, KINGSWAY, LONDON, W.C.2



9. When receiving palletized loads, lorries do not back up to the loading bay, but park out on an area of concrete in front of it. Fork trucks come alongside and load direct. This arrangement enables many more vehicles to be dealt with during the day, avoids congestion and speeds loading operations.



10. Each truck is fitted with a recorder which provides data on hours in use—both carrying and stacking. A careful check is kept on running hours so that the strict maintenance schedule laid down can be adhered to. Drivers are included in a bonus scheme which is based on tonnage despatched.



*Mule spinning at the Dart Mill, Bolton*

## Better lighting increases output

THE BETTER YOUR LIGHTING, the better the job people can do. Where the latest fluorescent lighting is installed, you not only *save power and money*, but you get better light — and more of it. Because there is less glare and shadow, people can work faster and more accurately. There are fewer errors and rejections, and the quality of the work improves as well.

### WHERE TO GET MORE INFORMATION

Your Electricity Board will be glad to help you to get the utmost value from the available power supply. They can advise you on ways to increase production by using Electricity to greater advantage — on methods which may save time and money, materials and coal, and help to reduce load shedding. Ask your Electricity Board for advice: it is at your disposal at any time.

## Electricity for **PRODUCTIVITY**

*Issued by the British Electrical Development Association*

## *Survey of Modern* **INDUSTRIAL EQUIPMENT**

### GAUGES & TOOLS

#### Fine Boring

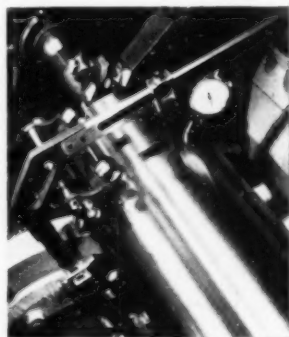
**A** NEW range of fine boring spindles will produce bores to extremely close limits of accuracy when used with diamond or carbide tipped tools.

Maximum speeds of from 1,500 to 7,500 revs. per minute can be obtained with the spindles, which can be supplied for *Excello*, *Heald*, *Precimax* and other makes of boring machines. Special, balanced driving motors are also available if required.



One of the new range of spindles for fine boring.

Right:  
The M.P.J. roll-gauge in use.



Machining accuracies to within five thousandths of an inch can be obtained with the spindles.

—(Enquiry Ref. No. 051/19.)

#### Gauging Rollers

**C**HECKING the diameter of large rolls of metal, paper, wood, etc., that have to be finished to fine limits can be simply, speedily and accurately carried out with the M.P.J. Roll Caliper Gauge.

## Not a Drop Spilled From 4 Full Glasses!

We are not suggesting you need a conveyor for carrying glasses of water, but a conveyor that is so smooth and steady in operation that it can carry four full glasses without spilling a drop obviously has many applications where extreme steadiness is required. It may well be that the Skate Wheel is the answer to one of your own problems. If so, you may care to note that it carries 150-lbs evenly distributed, can be easily erected by one man and gives a lifetime of service with no upkeep or running costs.



## **LAMSON** **SKATE WHEEL** **CONVEYOR**

**LAMSON** Telephone: LAD. 2424  
Telegrams: KELYWIL, HARLES, LONDON.  
**ENGINEERING CO., LTD. WILLESDEN N.W. 10.**

Be Independent!  
WITH THE **BLICK**  
Master Clock System.

NO. 1495

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Hours switch  
to avert  
big hold-up

FACED with a position more serious  
than in any winter since 1947, drastic  
economy will be needed to avoid exten-  
sive power cuts in the months ahead.

Electricity load-spreading will be far  
severe than last winter.  
generating plant  
rising faster than  
the rearmament  
series

# CRISIS

'POCKET'  
TO  
**BUT-**

just  
a  
minute!

How about time control?

Efficiency starts with the clock, and the problem now is, how  
are you to maintain synchronised and accurate time during the  
coming crisis?

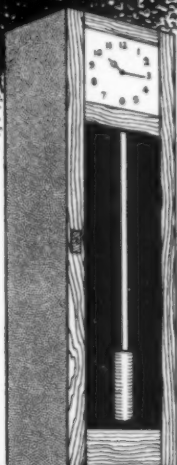
Synchronous Electric (Drive) Time Recorders, absolutely  
reliable under pre-war conditions, are now hopelessly unreliable.  
The answer is—

## The BLICK ELECTRIC MASTER CLOCK SYSTEM

Power cuts—overloading—come what may, this system is  
guaranteed to give you synchronised and accurate time—all the  
time!—IT IS INDEPENDENT OF ELECTRIC FREQUENCY  
VARIATIONS:

We can arrange to convert your existing Synchronous Electric  
System to the Master Clock System, or, should you desire it, to  
independent mechanical drive; whichever method you choose, we  
can help you become independent of any impending "power crisis."

We have written a Booklet on this vitally important subject—  
we should like you to have a copy.



**BLICK TIME RECORDERS LTD**

188/190 GRAY'S INN ROAD, LONDON, W.C.1.

TERminus 2722.



The instrument is mounted on rollers and can be easily moved to any part of the roll to be measured without lifting. The amounts of crown, taper, concavity and variations in diameter are all revealed by the gauge. Three standard sizes of the caliper gauge are available with the following

ranges: 4in. to 17in., 11in. to 32in., 20in. to 50in. Special sizes can be supplied to order.

—(Enquiry Ref. No. 051/16.)

### High Speed Hacksaw

**T**HE Kingley power hacksaw has been developed for the high-speed cutting of mild and high tensile steel bars and rods up to six inches in diameter. The 10, 12 or 14 inch blade is driven by a 1-h.p. electric motor and the cutting stroke can be varied between 3½ and 4¾ inches.

Long blade life is ensured by the hydraulic lifting of the blade on the forward, non-cutting stroke. A thumb-operated quick release

valve lowers the frame quickly on the work and an automatic cut-out stops the machine immediately a cut is completed.

—(Enquiry Ref. No. 051/18.)

### MECHANICAL HANDLING

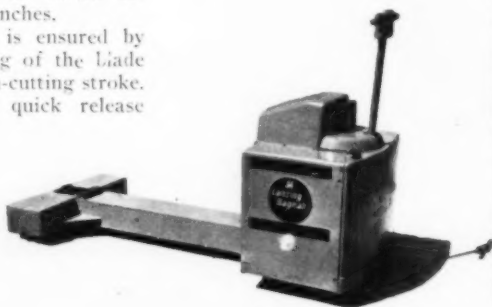
#### Vehicle Manipulation

**D**EVELOPED for London Transport, and used for manoeuvring buses in their garages, the P.J. truck also has industrial



Power hacksaw for high-speed cutting.

The P. J. truck—used for manoeuvring vehicles.



### Space Problem

B.E.V. High Lift Fork Trucks are extremely manoeuvrable and are able to stack above head height, this makes them invaluable wherever space is a problem.

We show a typical B.E.V. Truck at work in a Liverpool factory. If you have a handling or storage problem, our technical staff can advise you.

Photographs, courtesy of Belling & Lee Ltd.

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(Dept. B.H.)

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*Says the Typist...*

Siemens 'SIERAY' Fluorescent Lighting has made all the difference. 'SIERAY' lamps with 'SIERAY' fittings give better light for half the consumption of current. You can choose from a wide range of attractive designs for your office, store, factory or board-room. Fully descriptive leaflet on request.

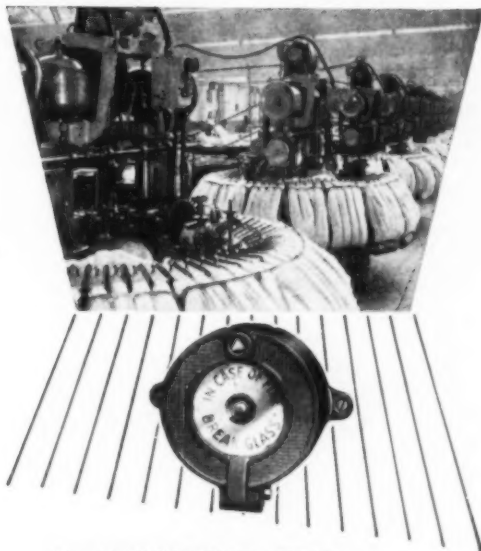


## FLUORESCENT LAMPS AND FITTINGS

SIEMENS ELECTRIC LAMPS AND SUPPLIES LIMITED  
38/39 Upper Thames Street, London, E.C.4.  
Branches in principal cities.

OCTOBER, 1951

## GENTS' PRODUCTS IN INDUSTRY



### No 2 KNITTING WOOL

Lives, property, plant, materials and vital production are all in danger when fire breaks out in industrial premises. Against this ever-present threat the first line of defence is a Fire Alarm System which can be relied upon. The quality of every piece of equipment in such a system must therefore be beyond doubt.

That is why for the new 34 acre £6,000,000 factory of Patons and Baldwins Ltd., at Darlington, the choice was

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### FIRE ALARM EQUIPMENT

*Makers of Electrical Equipment since 1872*

Write for a copy of "Fire Alarm Systems" which gives particulars of systems to suit all requirements.

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BURGLAR ALARMS • WATCHMANS TELLTALE CLOCKS  
STAFF LOCATORS • PROCESS TIMERS • LIQUID LEVEL  
CONTROL EQUIPMENT

applications. The truck has a standard-type motive power unit and a special low jack fitted to the load axle. The jack is slipped under the front axle of a vehicle weighing as much as  $7\frac{1}{2}$  tons, the front wheels are lifted from the ground and the vehicle can then be manoeuvred with ease.

—(Enquiry Ref. No. 051/13.)

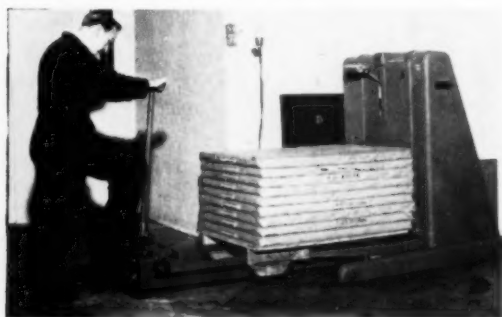
#### Auto-levelling Bench

**L**IFTING material from the floor or off a high stack on a bench is tiring for the operator

and also seriously slows up many production operations. A device that eliminates this unnecessary lifting by always maintaining the top of a stack at a pre-set height, no matter how much material is put on or taken off, is the *Autolift*.

Material can be transferred directly from trucks to the *Autolift* without any intermediate handling. Loaded stillages are placed over the forks of the *Autolift* and the truck is then withdrawn.

—(Enquiry Ref. No. 051/12.)



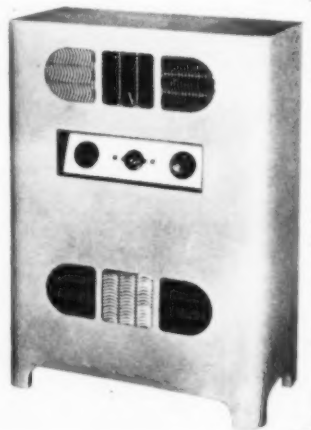
Transferring material to the Autolift.

The modern-looking E.C.D. air conditioner.

#### AIR CONDITIONING

##### Cabinet Conditioner

**A**IR-CONDITIONING, as opposed to merely adequate ventilation, is rapidly becoming recognized as something more than a luxury for factory and office premises. When employees can



## EQUALLY SUITABLE

*for the smaller factory*

## M16 TIME RECORDER

- Super-fast automatic recording by simple one hand operation.
- Single or two colour printing.
- Automatic time signals.
- Can be controlled from mains or master clock.

We invite enquiries on any problem relating to the indicating, measuring or recording of time electrically.

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Some record after 6 years\*!  
They might be made of steel

THEY ARE! THEY'RE NIFE...



\*These are the actual details of the performance of Nife batteries in 19 trucks operated by a Dock and Warehouse Authority.

Skilfully designed, a precision engineering job, Nife batteries have a record of service without equal—and an almost complete freedom from replacement costs.

**ROBUST CONSTRUCTION** Made of steel—case and plates—a Nife battery has enormous mechanical strength. It is practically indestructible.

**COMPLETE RELIABILITY** The almost inert electrolyte is actually a steel preservative—so that the battery does not deteriorate even during long periods of inactivity. It will withstand the heaviest rates of charge or discharge—and recover its voltage almost immediately.

**SIMPLE MAINTENANCE** A Nife is, for all practical purposes, free from self-discharge—the steel plates cannot buckle or shed active material and there is no corrosion of terminals.



(N.B. Nife batteries are not yet available for private cars or domestic radio.)

**NIFE**

**STEEL BATTERIES**

Repay their original cost many times over

NIFE BATTERIES • REDDITCH • WORCESTERSHIRE  
OCTOBER, 1951



British Manufacture

*Simply Hydraulics* - PLUS  
A FEW STROKES OF THE HANDLE

**HALVE  
YOUR HANDLING COSTS**

AND DO THE JOB BETTER,  
CHEAPER, QUICKER AND SAFER

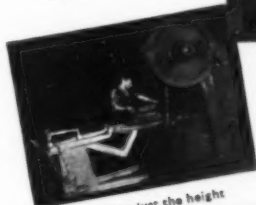
The Hydratruck is unique and fully guaranteed. Loads of half a ton are lifted by hand to nearly five feet in under a minute—compare this with manhandling.



A tricky job for one man but safe and easy with a Hydratruck.



Four cwt. tool easily handled by one man. No trapped fingers or damage to the tool.



Platform set to just the height for loading.

WRITE  
TODAY  
FOR FULL  
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A quicker turn round and no damage to the goods.

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LIMITED**

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This is something really new in office equipment. We supply cabinets which fit any record cards or sheets whatever the size. They can be built up or added to from time to time to form always a complete and convenient business unit of clean and immaculate design. There are fifteen different stock sizes which are all interlocking and can form any combination to cover all requirements for filing in cabinet form.

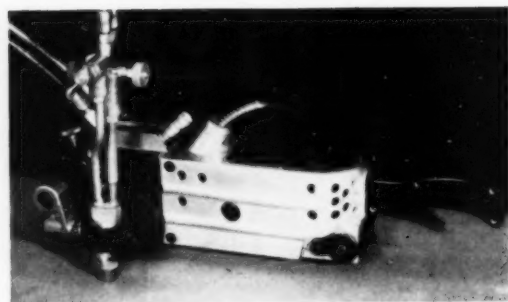


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(FILING & RECORDS EQUIPMENT) LTD.

33, Kinnerton Street,  
KNIGHTSBRIDGE, S.W.1.

Phone: SLOne 8855 & 8656.



The **Quicky** uses acetylene, coal gas or propane as its fuel.

work in a pleasant, germ-free atmosphere, efficiency is increased.

Unfortunately most air-conditioning equipment involves a considerable amount of initial outlay and usually alterations to the buildings concerned. A new system that goes a long way to resolving these difficulties is the *E.C.D.* air-conditioner.

Modern in design and finish, the *E.C.D.* is made up of two units: a condenser, mounted in a cabinet that stands on the floor of the room to be ventilated; and a conditioner, fitted with *Ozone* discharge tubes, which is housed in an adjoining room or cupboard. The two units are connected by a pair of copper tubes and any number of condensing units can be operated with a single conditioning unit.

The plant has an output of 300 cubic ft. per minute and a capacity of half-a-ton refrigeration. Dimensions of the room cabinet are 3ft. 6in. high by 2ft. 6in. wide by 1ft. 3in. deep. It is constructed of aluminium alloy throughout and is finished in a variety of colours to match existing decorative schemes.

—(Enquiry Ref. No. 051/15.)

#### PROCESS EQUIPMENT

##### Small but Versatile

**C**LAIMED to be the smallest oxy-acetylene cutting machine on the market the *Quicky* weighs only 13lb. and will make automatic straight cuts in steel up to 2½ins in thickness. The small electric driving motor runs off 220 volt a.c. or d.c. mains and

is housed in a well designed light alloy body.

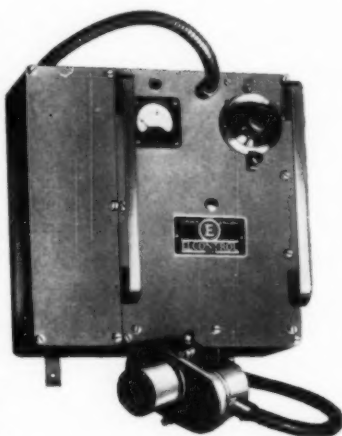
A cutting speed control knob is provided and is set by reference to a scale graduated by plate thickness. The cutter head can be adjusted vertically and horizontally and has a graduated scale for adjusting the bevel-cutting angle.

A trammel for cutting circles of 2½ to 40 inches in diameter, a guide rail for straight cuts and a set of nozzles and cleaning tools from 3/16 to 2½ inches in diameter are supplied with the machine.

—(Enquiry Ref. No. 051/20.)

##### Colour Control

**Y**ET another application of the photo-electric process has been found by designers of a timing



The **Elcontrol** colour control equipment.

**BUSINESS**



device for use in the continuous butt welding process. As colour temperature of a weld gives a more reliable repetition standard than simply gauging weld duration, photo-electric equipment has proved its adaptability. However, an over-riding timing circuit has also been used in this device, as an additional safeguard and a means of facilitating setting up the welding time.

A photo-electric head, which can be mounted within a few inches of the weld, is housed in a cast aluminium case with a tubular light shield and glass window. This is



**The battery-operated Statigun.**

attached to the amplifier and relay unit which includes both the photo-electric pyrometer and timing circuits. Sensitivity adjustment is controlled by a knob on the panel.

—(Enquiry Ref. No. 051/21.)

#### INSTRUMENTS

##### Static-Charge Meter

**E**LECTROSTATIC charges can accumulate on many non-conductive materials (such as paper and textile fibres) during manufacturing processes and in certain circumstances sparking can result causing fires and even explosions. The first step to eliminate this risk is to obtain a measure of the charges and an instrument that can do this quickly and accurately is the *Statigun*. Battery

OCTOBER, 1951



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not only with the appearance of your letters but in the speeding up of your other office work. As an Imperial Agent I can give you details of the most efficient typewriter installation for your particular business.'

Your nearest Agent is in the Telephone Directory under Imperial Typewriters.



## Imperial Typewriters and Service

IMPERIAL TYPEWRITER COMPANY LIMITED, LEICESTER.

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operated, the instrument consists of a capacitance coupling plate, an electrometer valve and a graduated meter.

Accessories enable the *Statigon* to be used for measuring resistance to earth or a neighbouring object—important when calculating sparking risks.

A canvas case is supplied for carrying the instrument and a wooden case, which also takes the accessories, is used for more permanent storage.

Four ordinary torch batteries supply the current for the instrument which weighs only 3½lb. and measures 10ins. by 9ins. by 3ins.

—(Enquiry Ref. No. 051/23.)

### GENERAL EQUIPMENT

#### Double Safety Grinder

**D**DOUBLE safety for the operator is provided on a new 10in. double-ended grinding machine. Patented sliding guards provide protection, yet allow the top, front and back of the wheels to be used for grinding; even when these guards are withdrawn there is no danger from flying pieces if the wheel disintegrates. Steel plates are machined to fit the tapered sides of the abrasive



The grinder, with one of its guards withdrawn.

BUSINESS

wheels and these hold the pieces together if a breakage occurs.

There is a gap of 27in. between the grinding surfaces and there is so little vibration from the machine that it need not be bolted to the floor. Grinding dust is carried by ducts to the base of the machine for clearance or salvage.

—(Enquiry Ref. No. 051/14.)

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The Diprofil eliminates much hand work.

amount of laborious hand work. These operations can now be carried out more quickly and easily with the Diprofil hand filing machine. Weighing only 1lb, the machine can easily be operated with one hand. Speeds of from zero to 120 strokes per second can be selected by means of a foot switch; the stroke is also variable up to a maximum of 6 mm.

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—(Enquiry Ref. No. 051/17.)

OCTOBER, 1951



# Take a look at This!

Dear Sirs:

Your attractively worded sales letter received this morning merits a reply.

Yours etc.

## and Gentlemen

—these things, on your right, are extracts from actual replies to circular letters.

More of these "salutes"—all replies to circulars—are published in the new edition of **Selling By Letter**. Also published (by permission) are the names of the business chiefs who did the saluting.

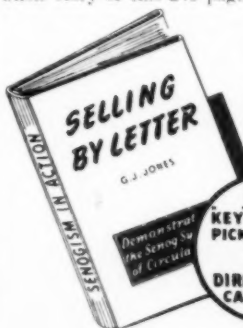
Do the firms whom you circularise, write to congratulate you on your salesmanship? Do they applaud to the tune of 30 per cent. and 48 per cent. replies.

In this new book, you can see such winners—43 of them. Several of the 43 "stars" are analysed; and that magic something, that gives to a letter, its power and its persuasiveness, is isolated and identified; and, made available, for use by you, in the letters that you send out.

But, in this small space, we cannot tell you the whole story of this 249 page book. We have done

so in a prospectus; and the purpose of this advertisement is to persuade you to write for that prospectus.

So send a note, on your business stationery, to: G. J. Jones (Senogism) Ltd., 302b Park Road, London, N.8. Simply say, "Please send to me, without obligation, the prospectus of the 2nd edition of **Selling By Letter**."



43  
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PICKED FROM  
14  
DIRECT MAIL  
CAMPAIGNS

## THE PROSPECTUS IS FREE

★ This is a "sieving" advertisement of the Senog system. We expect it to produce 175 replies. And, because prospectus, also, is good, these 175 requests should result in 50 sales.

## and this

Dear Sirs:

Your letter is sufficiently intriguing and clever to at least make one feel that one would like to see . . .

Faithfully yours,

## and this

Dear Sirs:

I am sending it on to our Australian Advertising Manager as an example of something quite unusual in the way of follow-up letters.

Yours faithfully,

# KWICK-DRY PAPER TOWELS

Dispensed from

**AUTOMATIC CABINET  
CONTROLS Waste!**



*Cuts your Towel  
Costs*

and is cheapest in the long run!

**IN OFFICE, FACTORY and CANTEEN**

These **BETTER** quality towels **REALLY DRY** and are cheapest in the long run because, released **ONE AT A PULL** from the cabinet there is **NO WASTE**.

**KWICK-DRY PAPER TOWELS**

- \* Cut your towel losses.
- \* Cut your Laundry Bills.
- \* Cut time-waste.
- \* Offer a fresh, cream shade towel for every occasion.
- \* Remove infection dangers of the old communal towel.
- \* Are stronger wet than dry and do not disintegrate
- \* Conform to 1937 Factory Act.

**CUT COSTS — BE MODERN  
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KWICK-DRY TOWELS are also supplied flat-interfolded in packets.

Full details on application to Towel Dept.

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BRIMSDOWN, ENFIELD, MIDDLESEX**

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**Miss Jones, have we moved to the country?**

No, Mr. Perks.

Then perhaps the country has moved to us?

Not that I know of, Mr. Perks.

Strange! I could have sworn I caught a breath of real fresh air, the kind that blows off the sea across fields of new-mown hay.

It's the Walter Ozoniser, Mr. Perks — that little box thing on the wall. Mr. Bones says it makes ozone from oxygen, and in doing so it destroys the particles of matter which make the air stale and stuffy.

Really, Miss Jones?

Yes, Mr. Perks. Mr. Bones says it will last for years without replacements, and help us to work harder.

Ah, I might have known old Boney would have an ulterior motive.

**Walter Ozoniser** Single Unit (up to 4,000 cu. ft.) £6.4.0.  
Double Unit (up to 10,000 cu. ft.) £9.18.6.  
Write today for a descriptive leaflet.



• Ask for details, too, of the Walter No-Cord Iron and Board and the Walter Electric Clothes Dryer. They are both practical time and labour-savers.



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**J. & H. WALTER LTD.** Domestic Appliance Division  
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# Visual Aids Help 2,000 New Employees a Year

By FRANK G. CASEY

Through the two training schools of Joseph Lucas, Ltd., pass 2,000 female employees a year. To help recruits to learn their jobs and to impress on them factory safety rules, various visual aids are used. One of them is the combined visual and audible instruction unit described in this feature.

"ONE picture is worth a thousand words"—so runs the proverb; and practical proof of the truth and wisdom of the saying lies in the increasing use of "visual aids" for a variety of purposes in modern industry. Visual aids range from the simple poster or wall chart that uses some form of illustration or diagram, to the elaborate sound film in full colour. Between these two extremes lies a variety of equipment and material all designed to say it with pictures.

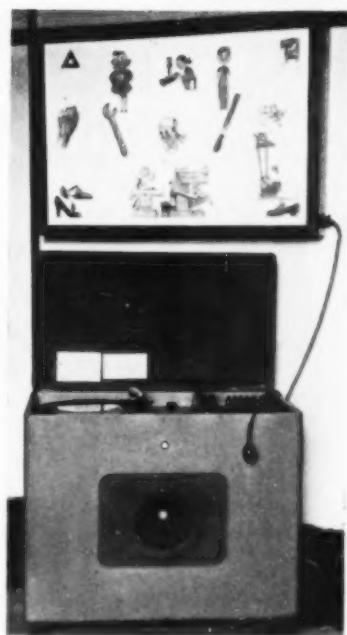
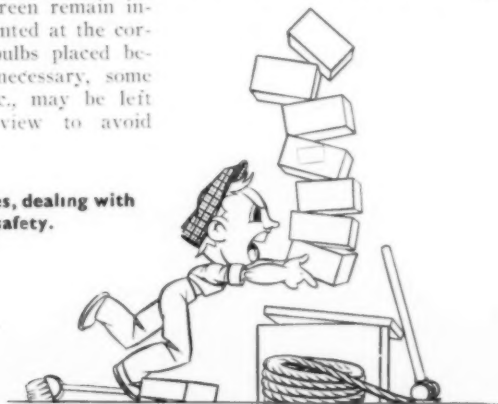
Among the equipment that is proving of value to industry for instruction and training is the *Synchrophone*. Basically it consists of a glass-fronted screen covered with black and white or coloured images which are illuminated in a predetermined sequence, synchronized with a commentary recorded on gramophone discs. The pictures on the screen remain invisible until pinpointed at the correct moment by bulbs placed behind them. If necessary, some pictures, titles, etc., may be left permanently on view to avoid

leaving the screen blank when the apparatus is not in use.

The sound unit for playing the records is like a radiogram in appearance; unobtrusive signals during the commentary actuate the mechanism which illuminates the pictures. Although each subject to be covered requires a picture frame, any number of them are served by one sound and synchronizing unit. Facilities are available for producing the frames and records on any subject and a variety of treatments can be adopted. The manufacturers can supply standard frames on a number of subjects, such as road safety and the care and use of tools. The average time taken for a complete visual lecture is 10 minutes.

Most useful field for this equipment in industry is probably

One of the images, dealing with factory safety.



The Synchrophone unit with the glass fronted screen above it.

in the welfare and training department for instilling the elementary principles of hygiene and factory safety into new employees, or for helping workers to do their jobs more efficiently.

One firm which has proved the value of the equipment for this type of work is Joseph Lucas, Ltd., of Birmingham, manufacturers of electrical equipment and accessories for vehicles and marine and agricultural engines and machinery. Through their two training schools pass some 2,000 new employees a year. All of them are women and girls (the male employees have a different system of apprenticeship training), and most of them have to be taught their jobs from scratch.

The firm started using the equipment during the war when they received a sudden influx of workers directed from other, less essential, occupations, who were without factory experience. Fearing a sharp rise in their accident rate, the firm decided to initiate a



special recruit safety-training scheme; they picked the *Synchrophone* as being the best and quickest method of impressing on these inexperienced employees, the rules of factory safety. So successful did the method prove that since then, all new employees reporting to the training schools have seen the visual safety lecture as part of their basic training.

The trainees are grouped in classes of up to 20 and they see the lecture in a room fitted up for the purpose. At the end of the lecture there is a discussion during which the instructress answers questions and clears up any points which have not been understood.

To drive home fully the points made, the screening is always linked with a visit to the works surgery.

Humour is used to put over the safety message; caricatured workers are seen on the screen performing operations first in the wrong and then in the right way. The management find that the judicious use of this cartoon tech-

nique increases the effectiveness of the safety propaganda. Flexibility is another attribute of this type of instruction. For instance another frame, "Care of Milling Cutters," is used in the training schools. When this was first introduced the war-effort was at its height. It was therefore pertinent to include a picture showing that careless damage to machine tools was so much gold poured into Hitler's pocket. To show this today would of course be ridiculous, so the picture has been removed without detriment to the whole.

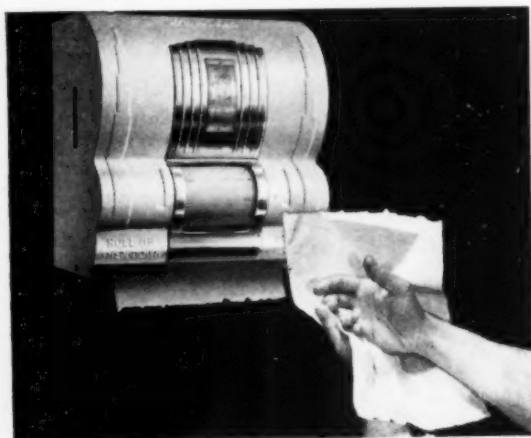
The *Synchrophone* is not, of course the only method of safety training used by Joseph Lucas. Posters, etc., play their part and once a year a safety week is held, during which an intensive campaign of film shows, lectures and demonstrations keeps the workers safety-conscious. Although it is extremely difficult to give facts and figures of tangible results achieved in lowering the accident rate as a result of using the *Synchrophone*, there is no doubt it has had a last-



Another typical example. Images can remain invisible until illuminated.

ing effect. The company say that they are well-satisfied with the results achieved with this method of instruction, and this may be gauged from the fact that two copies of a specially commissioned unit, "Methods of Working," have just been delivered to their schools. Although the initial cost of these units is high they are convinced that they do the job of instruction in a way impossible with any other method.

*New Health Equipment appears on page 102*



*Care and Cleanliness*  
go hand in hand

**G**UARD against the spread of infection and ensure that your washrooms are hygienically safe by installing the **HARCRAFT PAPER TOWEL SYSTEM**.

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**INCINERATOR** will automatically and effectively destroy sanitary  
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• The only Safety Incinerator in existence.

**The BARRYWALD**  
Safety Automatic Incinerator

*Some MEN do...*

Dear Sir,  
Please supply:  
One **BARRYWALD SANITARY INCINERATOR**.  
One should say that we are quite  
satisfied with the one supplied  
to us in 1948, and would be glad  
if you will hasten delivery.  
Yours faithfully,  
[Signature]

**ECONOMICAL  
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FOOLPROOF  
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Where four-side press protection is necessary, a "curtain" of light is projected around the installation—from projectors to photo-electric cells by a mirror arrangement—forming a safety barrier. If this light stream barrier is interrupted in any way, relays are de-energized, causing immediate shut-down of the machine even though controls may be depressed.

One advantage of this is that all operators are safe even if hidden from the man at the controls.

### Heavy Duty Cleaner

**M**AKERS of the Model 33, a heavy duty suction cleaner, claim to have found the answer to

commercial cleaning of the most onerous kind.

Made in two sections, this three-wheeled, adaptable suction cleaner has been specially designed for commercial and light industrial

The model 33 vacuum cleaner has been specially designed for use in offices and industrial premises. Some of its accessories are included in this photograph.

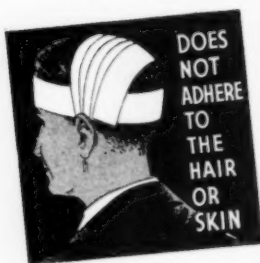


use. It is made of robust materials and attractively finished. First section of the unit, the cover, includes the motor and the filter shaker, while the second section, or body, serves as the dust container.

Various attachments are supplied for fitting to the cleaner.

Baffle plates (preventing internal disturbing of dust already collected) and an efficient filter, ensure that all dust is kept within the unit itself.

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2in x 4yds · 16/- PER DOZ



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### SANOID "COHESIVE" BANDAGE M.334

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**B. 51.** Cantilever Chair. An all purpose office chair. Curve-shaped padded seat and back.

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The danger of food poisoning in the canteen can be avoided by seeing that food is served in a hygienic manner; crockery and cutlery must be not only visibly clean and dry, but also free from germs. By employing a new washing up technique, the Rootes Group protect their canteen customers and staff from infection.

## New Washing Up Method Safeguards Canteen Customers

By DAVID EARLY

**H**OW do people get food poisoning? For the past two or three years those responsible for the health, welfare and feeding arrangements of industrial workers have been increasingly conscious of this question. Quite apart from humanitarian considerations, food poisoning has been responsible for a great deal of absenteeism in industry; and since most concerns of any size have their own canteens, it is logical to trace food poisoning to those institutions.

Not that food poisoning is confined to canteens! In a Midland town, tests were carried out in 25 kitchens, including approved hotels, restaurants of multiple stores and similar places. Out of a total of 615 spoons, cups, forks, plates and glasses examined 201 were found to be bacteriologically unsatisfactory. In one month of 1949 nearly 1,300 cases of food poisoning were recorded in Britain.

The way to prevent food poisoning is, of course, to see that good food is served in a hygienic manner. Crockery and cutlery must be not only visibly clean and dry, but also free from infection. A new technique has been evolved which achieves both these ends. It is being applied in the Halkin Street, London, canteen of the Rootes Group. Results are satisfactory and those responsible for catering at Rootes have extended the technique to other canteens.

Research has shown that it is not

sufficient to put utensils into hot or warm water to which has been added a cleaning agent (or detergent). If the washing up goes on for any length of time, then the amount of food soil in the water increases. Soon the water is carrying a load of invisible bacterial infection as well as visible dirt. Utensils which go into this water appear to be clean when they come out, but they may be more infected than when they left the table.

Scientists have been studying this problem for a number of years and a group of them have produced an

answer which involves the use of a special working mixture of liquid detergent and sodium hypochlorite. Used in the right way, this mixture keeps the washing-up water free from infection and at the same time makes a good job of cleaning the utensils. Although only hand-hot water is used, the utensils can be rack dried. And if racks are not available then washing-up cloths can be sanitized with the same solution.

One of the most important considerations is to see that staff appreciate the need for bacterial

NORMAL METHODS				NEW ROUTINE		
Sample	Total bacterial count at 37 C	Intestinal Organisms	Category	Total bacterial count at 37 C	Intestinal Organisms	Category
Wash water end of first sink-full	240,000	Heavy Infection	Unsatisfactory	10	Absent	Satisfactory
Wash water third sink-full	200,000	Heavy Infection	Unsatisfactory	20	Absent	Satisfactory
Pot wash water	96,000	Heavy Infection	Unsatisfactory	100	None	Satisfactory
Cutlery bowl water	17,000	Moderate Infection	Unsatisfactory	40	Absent	Satisfactory
Plate from rack	290	Slight	Unsatisfactory	160	Absent	Satisfactory
Dried glass	110	Absent	Satisfactory	10	Absent	Satisfactory
Fork from box	103	Slight	Unsatisfactory	10	Slight	Unsatisfactory
Dessert spoon from box	5,760	Moderate	Unsatisfactory	20	Absent	Satisfactory
Cup ready for use	140	Slight	Unsatisfactory	50	Absent	Satisfactory

Results of tests carried out at Rootes' canteen, before and after the new washing up technique was introduced. (Table by courtesy of Milton-Deosan Research Laboratory, who conducted the tests).

cleanliness. Scientists from the firm responsible for the germicide asked a cook at Halkin Street to press her fingers on a dish of laboratory jelly. The cook's hands were visibly clean, but after the jelly had been incubated she was able to see colonies of germ cells growing on the surface. Most of these germs were, of course, quite harmless, but the human body is often a source of food poisoning germs, and the point of the demonstration was to show the staff the way in which germs can be transferred from the body to the hands, from the hands to cutlery and crockery, and from these utensils to other human beings.

While this sort of infection can be carried from the staff to the customers, the customers have even more opportunities for transferring germs to each other, since they put cups and spoons and forks to their mouths and the mouth itself can be, and often is, the source of infection. The sanitization of all equipment during washing-up is therefore necessary from every-

body's point of view.

The next step at Halkin Street was to demonstrate the sanitizing routine so staff would understand how to use the two products. An ordinary sink was filled with water and to this was added the working mixture, consisting of a hypochlorite germicide and a compatible liquid detergent. The grease solvent and the germ killer having been put into the sink at one and the same time, the crockery and utensils which came out were not only clean but sanitized. This is shown by test results taken by bacteriologists from the washed crockery and utensils. (See page 105.)

The working mixture was also added to water used for washing hands and all kinds of surfaces like table tops, trays, draining boards, etc. In this way it was impressed upon the staff that it is not much good sanitizing washing-up water and the crockery and cutlery if you merely put the germs straight back again.

The new sanitizing technique is now an accepted part of the work-



ing day in the Halkin Street canteen. The staff welcome it because it helps to keep their kitchen extra clean and in addition they know that they are protecting themselves and the canteen users from the ever-present risk of food poisoning. The Rootes Group have given a lead by showing that safer food service can be achieved as a routine in industrial canteens.

Illustration above by courtesy of Milton Deosan Research Laboratory.



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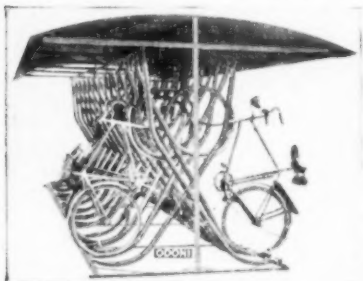
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## "PARKETTE" TEA DISTRIBUTION TROLLEY

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Holds 108  
½-pt. cups  
and has  
4 drawers  
for cakes.

Measures  
only 2' 10"  
x 1' 10" x 3'

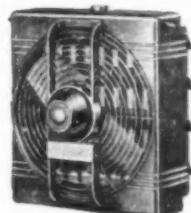
Mounted  
on 9"  
"Homa"  
ball-  
bearing  
castors.

Just one  
of many  
designs.



**JAMES FARQUHARSON & SONS LTD.**  
PARK PARADE, HARLESDEN, LONDON, N.W.10

*Heat, Sir?  
- certainly -  
wherever you want it!*



"SPIRETTE" MODEL "H"  
for operation by Steam or Hot  
Water.

Price £11 11s. 0d.

'SPIRETTE' UNIT HEATERS  
are suitable for heating shops,  
offices, canteens and are available  
for operation by steam, hot water  
or electricity. Features are: High  
efficiency, sound construction and  
quiet running.  
Write for List No. B 94 which describes the range of 'Spiral Tube' Unit Heaters which are suitable for heating all types and sizes of buildings.

**SPIRAL TUBE**  
Unit Heaters

**THE SPIRAL TUBE & COMPONENTS CO. LTD.**  
OSMASTON PARK ROAD DERBY. Telephone: Derby 46067  
London Office: Honeypot Lane, Stanmore, Middlesex.



# AT LAST !!

## TIMEKEEPING FREE FROM POWER CUTS



MASTER CLOCKS

PUBLIC CLOCKS

OFFICE CLOCKS

DOMESTIC CLOCKS

INDUSTRIAL CLOCKS

TIME RECORDERS

ALL

SELF - WINDING



## SYNCHROMATIC TIME RECORDING COMPANY LIMITED

65 ERSKINE STREET,  
LIVERPOOL, 6.

(Telephone: ANfield 1834)

135 Tottenham Court Road,  
London, W.1.

(Telephone: Euston 1962)



## OFFICE EQUIPMENT INDUSTRY NEWS

*Continued from page 76*

"some radically new machines." No details of these are, however, yet available.

On completion, the new plant will cover about 150,000 square feet and will bring the number of workers employed by Burroughs at Strathleven to nearly 2,000. Production will be doubled.

Burroughs Adding Machine Co. of Detroit, have acquired Control Instrument Inc., of Brooklyn, N.Y., designers and manufacturers of electronic instruments and fire control devices for the U.S. Navy.



**E**XPORTS of office machinery during the first half of 1951 were 50 per cent. greater than in the same period of 1950 and more than the figure for the whole of 1949 — then a record. They amounted to nearly three times the entire output of the industry in 1935.

The detailed figures, as released by the Office Appliance and Business Equipment Trades Association, were £4,140,747 in 1951, compared with £2,708,029 in 1950.

Biggest single increase was in accounting machinery, exports of which rose from £560,151 in the first half of 1950 to £1,345,235 in the same period of 1951. Type-writers, however, came a good second, with £1,002,064, against £630,464. Duplicator exports were up by 30 per cent., and those of safes and cabinets by 44 per cent. Shipments of metal furniture (which included domestic furniture) rose by 11 per cent.



**A** NEW wage regulation order, which came into force on August 20th, increases minimum wages of workers covered by the Retail Bookselling and Stationery Trades Council (Great Britain). Increases range from 2s. a week for workers under 18 to 10s. a week for shop managers.

## NEW FOR YOUR OFFICE

*Continued from page 70*

vided. When the switch is in the "rest" position, a brake stops the disc, but the turntable continues to revolve and the valves, etc., remain switched on; this eliminates any "warming up" delay.

Volume and tone controls are provided and the jack-plug on the transcriber's headset acts as a switch, giving reproduction either on the headset, on the built-in loudspeaker or on both simultaneously. A plastic foot-operated switch gives single groove back spacing and also stop and start control. The needles will play up to 200 sides and can be replaced immediately when worn.

A sales and service organization is already in existence in this country, and plans to manufacture the machines over here are nearing completion.

—(Enquiry Ref. No. 010/44.)

## Improved Adding and Listing

**T**HE latest model of a range of electric adding/listing machines incorporates a direct credit balance feature. Negative or positive balances are computed so



quickly that they print immediately the motorized total bar is touched.

A full 10-line keyboard is fitted, finished in pastel shades to eliminate eyestrain. All controls are arranged on the right of the keyboard within easy reach of the operating hand.

—(Enquiry Ref. No. 010/46.)



## THE DOLLAR MARKET

*Continued from page 43*

night, followed, in many cases, by a smaller permanent display. We ran joint advertisements and published a joint brochure. And everywhere we publicised the group symbol.

"All this was, of course, in addition to the regular sales activities which we undertook as individual firms. But even here, we helped each other. We maintain our individual showrooms in New York—but each contains a showcase in which products of the other five firms are exhibited.

"There is no doubt that our campaign has been highly successful—the sales figures of ourselves and our colleagues show that. And there is equally no doubt that the collective campaign is—at least in America—an essential development in modern merchandizing methods."

**8.** CAN advertising on the scale that the British exporter can afford, bring results when competing with American firms with a relatively unlimited advertising expenditure?

"THE main fact which such a question overlooks is the immense amount of advertising that is done in America by retail outlets. If you have a saleable product, your customer—the retailer—will join with you in advertising it, and pay some of the advertising bill."

**9.** WHAT help from outside sources (e.g., Government bodies, B.E.T.R.O., the F.B.I., etc.) is available to the British exporter, and what is this worth in practice?

"THE sort of help specified is invaluable to a firm going into the market for the first time. The officials of these bodies in America know the sort of people who will help the enquirer, and can put a manufacturer into touch with the sort of information he wants. Once a firm is established, the main value of such organizations is in the provision of background material on trends in trade. The firm's own agents are a better source of information for more detailed developments."

OCTOBER, 1951

## OFFICE PHOTO DOCUMENTATION

**10 HOURS** typing and checking  
reduced to **30 MINUTES**

*Foreign correspondence, C.D.3 Forms, Charts, data analysis sheets, Govt. returns, contracts, drawings, extracts of books, research papers, etc.*

The Ruthurstat Apparatus affords a splendid means for obtaining speedy, errorless photo-copies of documents which would otherwise require many hours typing and checking. Reproduction quality is high with junior labour.

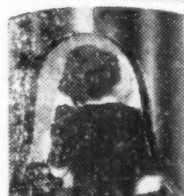


**NO DARK ROOM, NO FOCUS, NO SKILL**

Office Photography—with Englands Finest Equipment—  
by

**RUTHURSTAT  
LIMITED**

104 HIGH HOLBORN, LONDON, W.C.1. HOLBORN 4737



Wherever there's

**NOISE**

there's need for a . . .

**BURGESS Acousti-Booth**

Ever felt awkward on the telephone—unable to catch the client's name or what he was saying to you? Undoubtedly you have! And all the time you knew that the "bad line" (the excuse you probably made for your poor telephone reception) was caused by noise disturbance at your end. Telephone-frayed nerves become a thing of the past when you install a BURGESS ACOUSTI-BOOTH. Experience the relief of being able to 'phone without trouble in the midst of noise. Ask any man who owns one of the many thousands now in use. Write for Bulletin B.P.131 S.C.B.



Burgess Products Company Limited, Acoustical Division, Hinckley, Leics.



## Built for the boss

Here's the chair designed for the man at the helm—



*The KE Chair*

### EARLY DELIVERY

### Finger-Tip Control Dignified Comfort

The user can adjust the back-rest in seconds both vertically and horizontally—by means of the simple Leabank mechanism: Seat height adjustment quickly effected by rotating seat.

Foam rubber cushioning—tailored bedford cord covering—clean metallic grey enamel—all combine to make a handsome chair that will look right and feel right.

### LEABANK WORKCHAIRS

Details of full range of Leabank Workchairs—for office and factory—from your local dealer or direct from:

### LEABANK CHAIRS LTD.,

19 CLIFTON HOUSE,  
EUSTON ROAD, LONDON, N.W.1



## NAME TO NOTE

When next you require process blocks of drawings or photographs for your letterpress print, you will find it profitable to consult Gee & Watson. Process engravings by Gee & Watson are on a high plane of craftsmanship and service to clients is personal and helpful. The Gee & Watson organisation includes top-ranking studios for production of creative advertising drawings and photographs.

*Enquiries to Sales Manager*

## GEE & WATSON

111 SHOE LANE LONDON EC4 Central 6555, 18 Lines  
Northern Office at 4 Chapel Walks, Manchester 2

*Blackfriars 4660*

PROCESS ENGRAVERS • ARTISTS AND PHOTOGRAPHERS  
TYPESETTERS • STEREOTYPERS • ELECTROTYPERS

## FACTUAL CONTROL

by  
**FLASHING  
SIGNALLING  
OFFSETTING and  
COLOUR**

Cardineer gives the  
answer QUICKLY



## The **CARDINEER** Rotary Card Index System



Supplied by  
THE BUSINESS EQUIPMENT DIVISION OF  
**E. N. MASON & SONS LTD.,** Arclight Works  
Colchester. Telephone No. 2266  
and at LONDON, GLASGOW, MANCHESTER and BRISTOL

INCORPORATING EVERY FUTURE REQUIREMENT

THE  
**DICTOREL**



THE  
**DICTOREL**

THE LAST WORD!  
IN RELIABLE  
DICTATING EQUIPMENT

SUPERSEDING  
DISCS, WIRE  
AND TAPE

A product of the world famous A.C.E.C. Company

The DICTOREL is an entirely new concept in magnetic dictating machinery. The recording medium is simply a sheet of paper — called a Dictogram. You can erase this at will using the same sheet for thousands of recordings; post it or file it for permanent records. You can also record your telephone conversations — without attachment to the instrument. The simplicity of feeding and operation will astound you, as the quality of reproduction and the stream-lined design will delight you.

Write, call or phone for a demonstration:

**THE TREVOR-JOHNSTONE COMPANY LTD.**

169-174, SLOANE STREET, KNIGHTSBRIDGE, LONDON, S.W.1.

(SLOane 6198/9)

## Overalls FOR ALL TRADES & PURPOSES



BOILER SUITS



BIB & BRACE



OVERALLS  
APRONS, etc.,  
for MEN and  
WOMEN,  
COATS,  
JACKETS.

The  
**"VOLE"**  
Brand  
RIGMEL SHRUNK

Write for PRICES and PATTERNS

**H. WHEELER & COMPANY LTD.**

107 London Road, Plaistow, London, E.13

Phone: GRAngewood 4071 (5 lines)

TO-DAY'S MOST INEXPENSIVE

## factory stool



Here it is at last — the factory stool which follows the suggestions for Factory Stool Design contained in Ministry of Labour Welfare Pamphlet No. 6 and is also inexpensive. The 'SITU' is simply, yet strongly, constructed of steel, with a varnished wooden seat. Attractively finished in olive green.

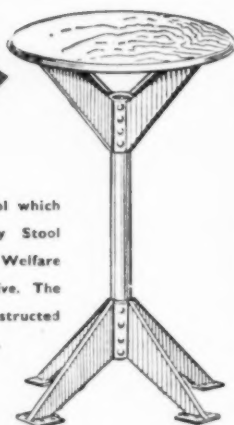
Available in heights ranging from 18 to 26 inches

Diameter of Seat - 13½ inches

Designed and manufactured by:—

**T. A. PRODUCTS LTD.**

20 ELMWOOD AVENUE, FELTHAM, MIDDLESEX. Tel. Feltham 2237



All one price  
**18/6** net

## The 'GLADIATOR'

Trimmer  
and Guillotine

For

TRIMMING  
PAPER, CARD,  
PHOTOGRAPHS  
LEATHER, Etc.



**BLADE:**—Finest Quality Self-sharpening Sheffield Steel. (*Guaranteed 3 years.*)

**BASE:**—Non-warping, wooden base fitted with RUBBER FEET.

**IVORINE RULE:**—Scaled Inches and Eighths.

**GUARD:**—Accident proof Patent Safety Guide. It also ensures a straight edge.

**GUIDE:**—Adjustable for cutting any size up to 13" x 13".

Retail price:

**£9-9-0**

**TAX FREE**

Prompt delivery

The **Standard**  
**OFFICE SUPPLIES COMPANY**  
57, FARRINGTON ROAD LONDON E.C.1.

Phone  
CHANCERY  
3581-1  
(4 lines)

**ABIX**  
CYCLE STANDS

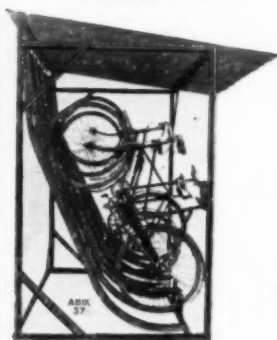
THE HOME OF THE  
BRITISH CYCLE.

The most efficient  
method of storing  
cycles.

The type illustrated  
is only one of the  
many which we  
manufacture.

Fully illustrated cata-  
logue on request.

All stands are of  
steel, rust-proofed  
and stove-enamelled  
green.



TYPE A

**ABIX** (METAL INDUSTRIES) LTD  
FACTORY EQUIPMENT SPECIALISTS  
TAYBRIDGE WORKS, TAYBRIDGE ROAD,  
BATTERSEA, S.W.11.

Phone: BATtersea 8666-7.

Grams: Abix, Batt, London.

## FOR THE BUSY EXECUTIVE'S DESK

In their black and cream cabinets the new Edison Loudspeakerphone units fit smoothly into the setting of the modern office, forming an attractive addition to the busy executive's desk and providing the quickest and most efficient method of office inter-communication.

The Loudspeakerphone is completely secret in operation and its simple push-button call system gives instant and foolproof contact.

It is not a rental system, you make one payment only.

### PRICE:

Standard Master Unit for 6 extensions **£22-10-0**

Standard Master Unit for 10 extensions **£23-10-0**

Extension Units (each) **£4-5-0**

NO PURCHASE TAX

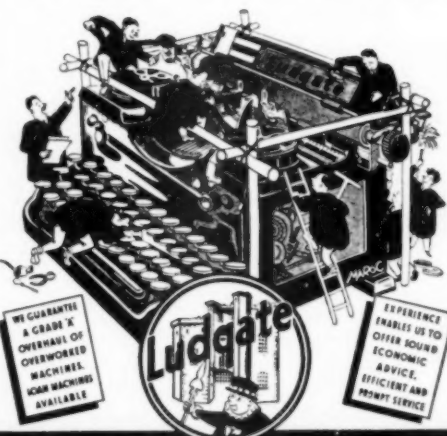


SEND TO-DAY FOR FULL DETAILS

**The Edison Swan Electric Co. Ltd.** 155 Charing Cross Rd., London, W.C.2. & Branches

Member of the A.E.I. Group of Companies.

### RING-HOLborn 3654 or 1644 for TYPEWRITERS FOR SALE AND WANTED



**THE LUDGATE TYPEWRITER CO.**

**75-76 FETTER LANE E.C.4 (OPPOSITE CAMAGES)**

### For Conferences and Conventions

Many important industrial associations and concerns have held pleasurable and successful gatherings at the Branksome Tower Hotel, which needs no introduction to most Directors and Executives in the spheres of business and commerce. An unusual excellence of cuisine and of wines, and a high degree of comfort and service can be expected, and will be found. Discussions and decisions are the easier in such an atmosphere.

To interested enquirers will be sent with pleasure quotations, and any further information desired, together with a list of important conferences held in recent months at this Hotel. Appreciative comments were received thereafter, without exception, from the chief executives concerned.

Bookings are invited from mid October onwards, and enquiries should be addressed to T. H. V. Hasdon Managing Director.

**Branksome Tower Hotel  
BOURNMOUTH**

The Leading British Hotel outside London

Telegrams: Branksome Tower, Bournemouth

Telephones: Bournemouth 4000

# OFFICE SUPPLIES AND ACCESSORIES

## Typists' Copy Holder

**T**HE difficulty which many typists experience in trying to read copy awkwardly laid at the side of the machine, has been solved by the evolution of a new copy holder and line-by-line indicator. This machine stands behind the typewriter and holds the copy firmly in position at convenient eye level. Each line of copy is obtained by pressing a lever at the right hand side of the keyboard.

Unlike its predecessor, the new machine can be adapted for use with accounting machines and even punched card equipment. Other new features include stronger construction, greater stability and adjustable height. Copy can be moved up or down, and there are two alternative line indicators. A backplate is provided to support copy for the full width of the paper. The control lever

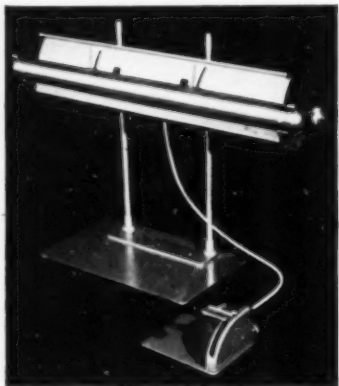
has also been re-designed to give stability and improved accessibility.

Each line of copy is held in the best light and can be read without turning the head. An adjuster provides any spacing from one to four lines of typewritten copy. A knob manipulates copy rapidly up or down. Models can also be supplied with a removable plastic magnifying bar. This is very effective

supplied if the cabinet is going to be used on a highly polished surface. The drawers can be fitted with Yale type locks for a small extra charge.

The cabinets are made of heavy gauge steel which is rustproofed and stove enamelled to constitute a really durable finish. All cabinets are 15½ inches from front to back, giving a minimum capacity of 1,000 cards per drawer. Bases or plinths can be supplied with rubber feet or castors; alternatively, legs can be fitted with or without castors, making an attractive stand on which a battery of two or four drawer units can be mounted.

—(Enquiry Ref. No. S.9/2.)



The new copy holder and line by line indicator.

is in dealing with difficult handwriting or figures. Foot controls can be supplied if they are required.


—(Enquiry Ref. No. S.9/1.)

## Five-roller Indexes

**A**N exclusive five-roller design has been built into a new set of card index cabinets which can be built up into multiple units as required. These rollers enable the drawers to glide smoothly and easily, which is a distinct advantage over many similar cabinets. Domed rubber feet can also be

## Cord Controller

**T**HE G.P.O. Telephone Department have authorized a new telephone cord controller which prevents curling and knotting and

  
 SINCE 1931  
**NATIONAL APPLIANCES**  
 64 ALDERMANBURY, E.C.2.  
 REBUILT  
**ELLIOTT-FISHER**  
 ACCOUNTING MACHINES  
 TWO YEARS' GUARANTEE.  
 IMMEDIATE DELIVERY.  
 50% SAVING IN COST.  
 LOAN MACHINES AVAILABLE.  
 F. J. Patmore Monarch 9440

  
**ADDING MACHINE EXCHANGE**  
 24 HOLBORN  
 LONDON E.C.1  
 Sale - Hire - Wanted  
 Telephone HOL 3239.

**RUBBER STAMPS, etc.**  
 For Quick Service and Reasonable Prices  
 send to:  
**HUNT BROS. (Rubber Stamps) LTD.,**  
 50 CHAPEL END,  
 CHINGFORD ROAD, E.17.  
 LAR 1893.

**ADDRESSABILT SERVICE COMPANY**  
 47 RED LION STREET, W.C.1.  
 Specialists in:  
 Guaranteed Rebuilt  
 "ADDRESSOGRAPH" Machines,  
 Service, Overhauls, Supplies.  
 HOL 5771.

**BERNARD CAKEBREAD**  
**LOOSE-LEAF SPECIALIST**  
 22 AVENUE CHAMBERS,  
 VERNON PLACE, LONDON,  
 W.C.1. HOLborn 0791.

# HORLER MEANS BUSINESS MACHINES

TYPEWRITERS, CALCULATORS, ADDING MACHINES, ETC., ETC.

**HORLER TYPEWRITER CO., 17, UNION COURT, OLD BROAD STREET, LONDON, E.C.2.**

(Branch on Broad Street Station)

\*Grams:—TYPANADD, STOCK, LONDON.

Cables:—TYPANADD, LONDON.

Tel.:—London Wall 5858/9 \*



**EXPRESS TYPEWRITER  
COMPANY LTD.**

"OMNIA NAVITA"  
(In all things thorough)

**TYPEWRITERS  
STANDARD & PORTABLE  
and  
ACCOUNTING MACHINES**



We can supply you with New or Modern Rebuilt Machines, and give you a liberal allowance on your old Machines.

We can rebuild your Typewriter or Accounting Machine and make it as good as new.

**ESTIMATES OF EXACT COST  
WITHOUT OBLIGATION.**

**TYPEWRITERS AND ACCOUNTING  
MACHINES**

**MAINTAINED BY CONTRACT.**

Phone: MONARCH 1841 (2 lines).  
18 LITTLE BRITAIN, LONDON,  
E.C.1.

**P.T.S. TYPEWRITER SERVICE**  
TYPEWRITERS. Exceptional offer of brand new portables and offices models; also Remington, Royal, Underwood, etc., reconditioned in stock; all machines fully guaranteed; generous allowances made for second-hand in part-exchange, or purchase outright at full market value.—Ring Cha 2814/5; also at Bay 8684. P.T.S., 24 Buchanan Bldgs., Holborn, E.C.1



**RUBBER &  
METAL STAMPS**

*of all descriptions*

**AUTOMATIC HAND  
NUMBERING MACHINES  
AND DATING STAMPS**

**ROBERT VAN HOUTEN LTD.**  
147 FARRINGDON ROAD,  
LONDON, E.C.1  
Telephone: TER 5304

preserves the life of the cord. The controller is neat and easy to fit and is made in various colours. The material from which it is made is said to be everlasting. It certainly looks a great deal more attractive than the usual tangle of unprotected cord.

—(Enquiry Ref. No. S.9/5.)

**Convertible Drawing Board**

**A** NEW draughting board has been designed to provide the draughtsman with a compact unit of general utility at a lower cost than the more elaborate draughting machines working on the parallelogram principle. This board occupies less space than other types, and yet is equally efficient and very simple to operate. Larger sizes can be fitted to drawing tables to form part of the furniture.



The straight edge of this draughting board is always at the required angle.

Wood, aluminium and plastic materials are used in the construction, and this accounts for the light weight of the equipment. The main aluminium extrusions which carry the pulleys and locking clamps are fitted along the top and bottom of the board. Special paper clamps are incorporated to enable the backing paper to be held in position without the use of drawing pins.

—(Enquiry Ref. No. S.9/3.)



**AJAX REBUILDS**

For many years Typewriters rebuilt by AJAX have had a reputation for quality, clarity and long service.

To-day, improved methods allow us to supply even better Typewriters. All makes, models and sizes available,

Underwood, Royal, Imperial, etc.

**MAY WE PROVE OUR CLAIMS?**

Also new light office Typewriters for immediate delivery.

**AJAX TYPEWRITER COMPANY,**  
10-12 HAMPSTEAD ROAD,  
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(Tottenham Court Road end)  
Phone: Euston 2774.

**DUPLICATOR SERVICES LTD.,**  
STENCILS, INK, PAPER,  
OFFICE EQUIPMENT,  
DUPLICATING.

Manfield House, TEMPLE BAR  
Strand, W.C.2. 8225

High Quality Commercial Stationery "GECO" Carbons & Ribbons  
Telephone: HOLBORN 6278.  
Gordon Edwards & Co.  
41 Gray's Inn Road, London, W.C.1.



The complete Typewriter Service.  
215 Hoe St., WALTHAMSTOW,  
LONDON, E.17. KEYSTONE 4702.

**W. A. PERKS for  
TYPEWRITERS & OFFICE FURNITURE**  
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THROGMORTON STREET,  
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Tel. MONARCH 0372.

## M & L. HAYCRAFT

24 ST. STEPHEN'S HOUSE,  
WESTMINSTER, S.W.1. Phone: WHI 7923

### Recording & Dictating Equipment for all purposes.

Demonstrations gladly  
arranged.

### DISTINCTIVE OFFICE APPLIANCES ORGANIZATION & METHODS.



● Open Type  
Shelving is the  
cheapest and most  
flexible unit for  
office and works  
storage. Each unit  
is separate and self-  
supporting.



## Helmsman STEEL SHELVING

As illustrated, width 2ft. 9ins., depth 12ins. or  
16in.; height and number of shelves as required.  
Shelves adjustable at 3in. centres, with 1in.  
turn-down all round. Stove enamelled in a  
range of colours.

● Clothes Lockers ● Bin Units ● Solid  
back and sides Shelving ● Cupboards  
● Works Cabinets.

### W. B. BAWN & CO. LTD.

BYRON WORKS ● BLACKHORSE LANE,  
LONDON E 17. LARKSWOOD 441/4.

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### AGENTS WANTED

Agents wanted on commission basis, with  
established connection amongst industrial  
concerns to carry Toilet Paper, etc. for re-  
putable Manufacturer. Write Box No. 1022,  
c/o BUSINESS, 180 Fleet Street, E.C.4.

### EDUCATIONAL

Can you speak with confidence on any  
occasion? Concentration, clear thinking and  
development of personality are the key to  
success. The art of clear concise expression  
for after-dinner speaking, chairmanship and  
business meetings can be acquired by train-  
ing. ABBEY SCHOOL FOR SPEAKERS, 36  
Victoria Street, London, S.W.1. ABBey 6488.

### FLOOR COVERING

The hardest wearing Floor Covering for  
Factory Offices, Laboratories, Test Rooms,  
etc. is INTERFUSION, the new British  
development exhibited at the Festival, South  
Bank Exhibition. Supplied in Rolls for easy  
laying. Fine range of colours and inlaid  
patterns. Quiet to walk on; will not tear  
or scratch, or suffer from indentation.  
Grease, oil, and acid resistant. Illustrated  
details: INTERFUSION LTD., D Dept., 66  
Fenchurch Street, London, E.C.3.

### FOR SALE

Addressograph Addressing Machine for en-  
velopes or similar repetition work with  
selector and machine for stencils. Motorised  
230V./1.50. F. J. Edwards Ltd., 359 Euston  
Rd., London, N.W.1. EUS 1061.

Copycat equipment, complete, never used,  
copy of invoice will be shown £138 9s. Will  
accept £75 cash, to be collected. Reason for  
disposal, staff shortage. Canning's Typists,  
Queen Square, Bath.

Dictaphone Transcribers for sale, good work-  
ing order. F. J. Edwards, 359 Euston Rd.,  
N.W.1. EUS 4681.

Dictaphones, Transcribers, Etc. Quantity of  
model 10X's and 12X's for sale £15 each.  
Electric shavers to match. Tele. Leeds 75431.

FRIDEN DID-251194. Electric Calculator,  
for sale; in excellent condition and regularly  
serviced. Price £150 or near offer. Box No.  
1025, c/o BUSINESS, 180 Fleet Street, E.C.4.

2 Complete RECORDON MAGNETIC DICTA-  
TING MACHINES including combined Micro-  
phone Receiver with Headband, Erase Bar,  
Mains lead with 2 Executives push-to-talk  
Microphones and one stop-start Typist's  
Foot Pedal attachment. To operate on  
200-250 volts A.C. All in perfect condition  
as new. Price £60 the lot. Apply Box No.  
1024, c/o BUSINESS, 180 Fleet Street, E.C.4.

Burroughs Accounting Machines—West End  
Company have 7 rebuilt machines surplus to  
requirements; good working condition; can  
be seen by appointment; single machines  
sold. Box No. 1026, c/o BUSINESS, 180 Fleet  
Street, E.C.4.

FULL STEAM IN FIVE MINUTES with B.  
& A. Electrode Boilers, used by British in-  
dustries for 20 years. No boilerhouse, no  
flue, no attendant needed. The most com-  
pact and convenient steam raisers available,  
can go beside machines using the steam.  
Write for Leaflet, 107 Bastian & Allen Ltd.,  
Ferndale Terrace, Harrow.

## FIRE! WHERE'S YOUR NU-SWIFT?

The World's Fastest Fire Extinguishers  
— for every Fire Risk

Pressure-operated by sealed CO<sub>2</sub> Charges

NU-SWIFT LTD. • ELLAND • YORKS

In Every Ship of the Royal Navy

DICTAPHONES and EDIPHONES: Large in-  
stallation of machines, excellent condition.  
Will sell single from £25 each, or in com-  
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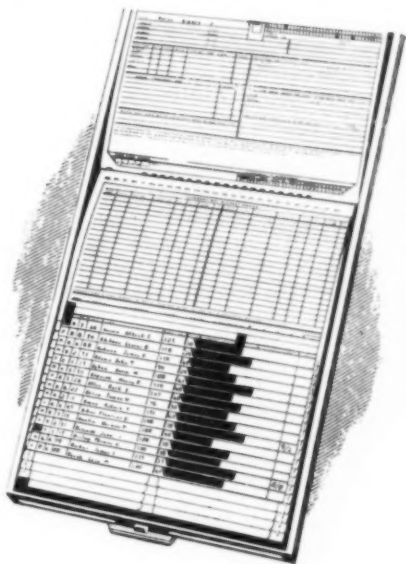


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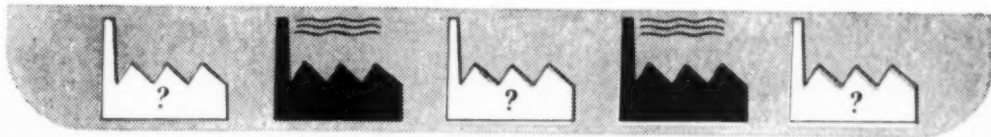
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